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—OF—

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Original Contributions.

PRIMARY TUBERCULOSIS OF THE RECTUM, WITH REPORT OF CASES.*

BY LEON STRAUS, M. D.,
ST. LOUIS, MO.

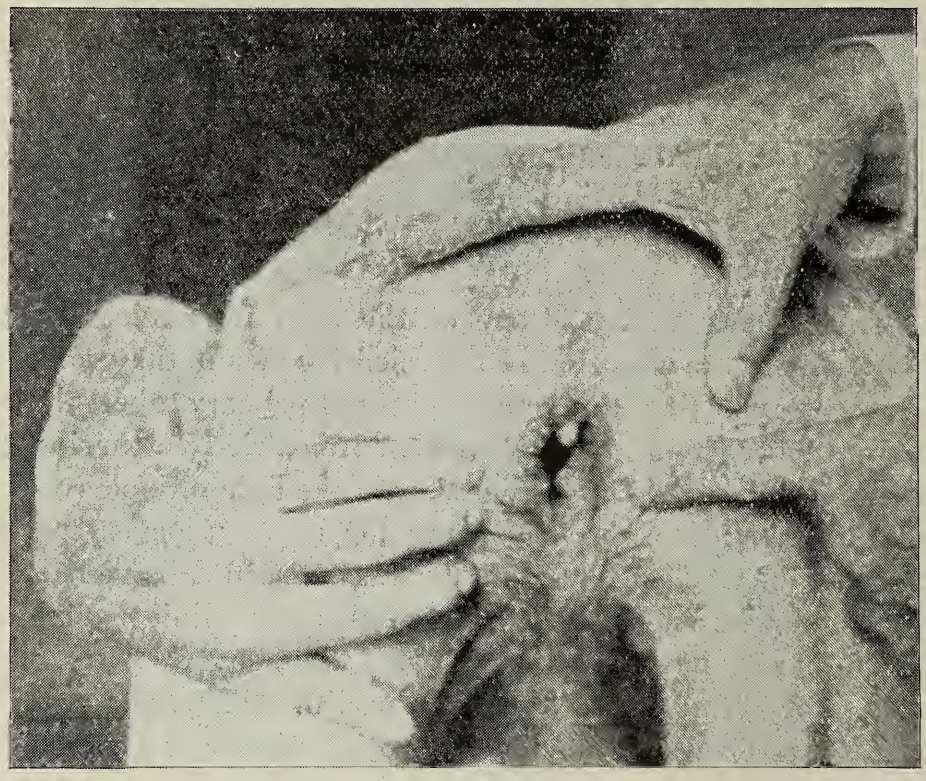
Tuberculosis to-day is one of the most interesting diseases which claims the attention of the scientific men in the profession. I purpose reporting a number of cases of primary tuberculosis of the rectum. From my point of view it is strictly a surgical disease, as much so as is appendicitis. In the light of modern scientific progress it is right and proper for us to use every particle of light which science affords: for that reason I have not been contented with making a diagnosis from the clinical symptoms or ear-marks, but have gone a step further; that is, I have looked for and found the tubercle bacilli. The finding of the bacilli is a scientific proof of diagnosis. So far as I know it is the only scientific research or work along this line. Messrs. Allingham, Cripps, and Ball have reported cases of primary tuberculosis of the rectum, but they have invariably relied on the clinical symptoms to make a diagnosis.

I dissent from the teaching that the classical symptoms as given in our best works on diseases of the rectum can at all be relied on alone in reaching a diagnosis. In the light of modern scientific research I hold it should be made a rule of practice to have a microscopical examination made in every case. It has

*Read before the Surgical Section of the Mississippi Valley Medical Association, at its Twenty-third Annual Meeting, Louisville, October 5-8, 1897.

been truly said, it is often absolutely impossible to obtain from books the kind of knowledge which is demanded in practice. I think it is especially true of primary tuberculosis of the rectum.

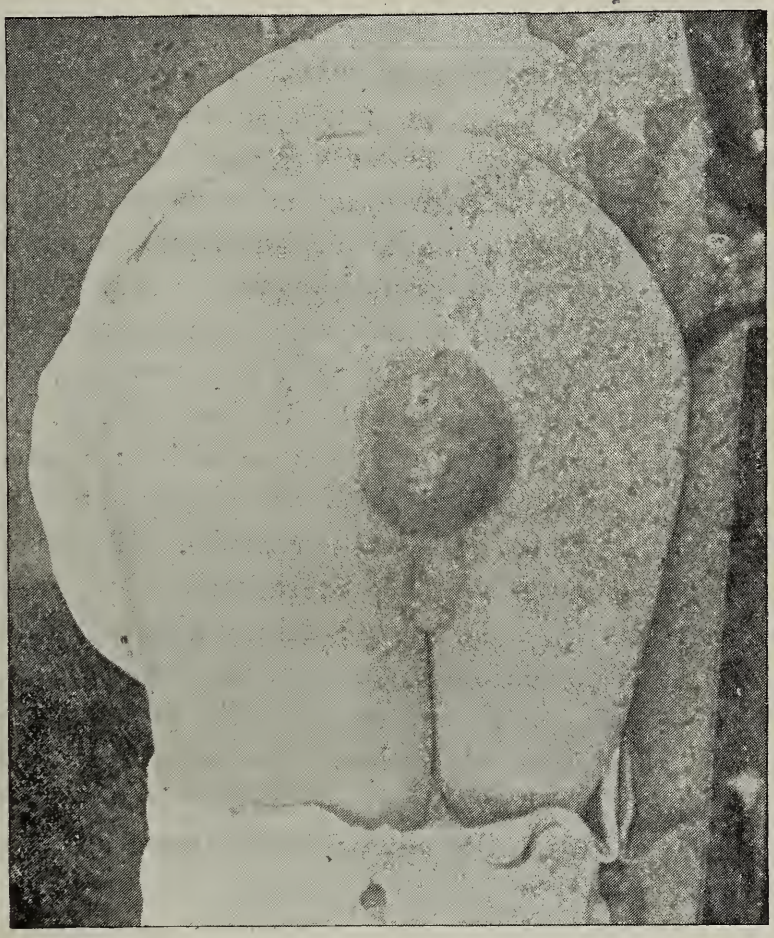
Case 1. Mr. C., referred to me by my friend, Dr. Dickinson; aged thirty-two; family history good. He had the appearance of one in good health; in fact, he looked quite an athlete. He had been suffering from rectal disease about six months. He had had an operation performed which was not successful, as it was not a radical one. I found on examination an old abscess cavity,



Case 1.—Extensive Tubercular Ulceration.

the result of a submucous abcess on the left side, the area of ulceration having extended beyond the old cavity. The extent of surface involved made it suspicious. The patient and physician were both slow to believe there could be any tubercular trouble, for the reason the patient had no cough, none of the constitutional symptoms of tuberculosis. My suspicion was correct. The tissue removed by the curettage contained numberless tubercle bacilli. An operation was advised, with the under-

standing that one or more operations might have to be made in order to get the patient well and keep him well. The operation was a combined excision and curettement. This patient made a rapid recovery and gained much flesh, thought himself quite well; but in this case, as in others, the scar tissue broke down. Another operation was advised, and a second operation was made, but not until the local trouble had become general; that is, it was so far as the entire alimentary canal was concerned. The patient died of tubercular enteritis.



CASE 2.—Tubercular Cystic Tumor.

The lesson taught in this case should not be lost; that is, do not wait until a purely local disease becomes a general one. I believe this case ought to have been saved and would have been, had he submitted to a second operation earlier.

CASE 2. Boy, aged fourteen. For more than three years he had noticed something coming down after each stool which had

to be put back. The last few months it had grown or enlarged until it became difficult and painful to replace it, and for that reason he sought relief. This was a most interesting case for more than one reason: it had been diagnosed as prolapsus, and also rectal hernia. It proved to be a rectal cyst which had become tuberculous. It was quite large with a broad pedicle, and was removed by making a double row of sutures. The patient made a rapid recovery, and has remained in perfect health up to the present time, more than two years.

Case 3. Mr. L., aged thirty-eight; referred to me by my friend, Dr. E. H. Dalton; family history good. This patient had had rectal trouble for some years. Examination revealed a very extensive ulceration, so much so that Dr. Dalton and myself doubted seriously whether any result could be had; and so stated. We, however, agreed to make an operation, provided that he would allow us to make any subsequent operations that we thought necessary. His condition was so very wretched that he determined to submit to any thing that gave any hope of recovery. He was prepared carefully for operation, which consisted in a curettement with more or less cutting. The first operation very much improved his condition; a second still more improved him, and a third completely cured him. He gained thirty pounds of flesh in a few weeks. He has remained well almost three years since the operation.

Case 4. Miss S., aged thirty; family history good; patient had been treated for chronic dysentery for months; no examination had been made of the rectum until she came to me. I found a large area of ulceration. The chronicity of the case, together with the large extent of surface involved, made me suspect tuberculosis. The diagnosis was confirmed by finding the tubercle bacilli.

The operation made in this case was a combined cauterization and curettement. Recovery was not rapid, but in the end, good. The patient has remained well now more than twelve months.

Conclusions.

1. That primary tuberculosis of the rectum is not so infrequent as some of the leading authorities have taught.

2. That it is a surgical disease as much so as is appendicitis.

3. That it is not and can not be diagnosed by the clinical symptoms as given by the various writers on diseases of the rectum.

4. That the only scientific and correct way of making a diagnosis is by the use of the microscope.

5. That by thorough curettement or excision or both together with cautery it is not only cured but remains cured much more often than is dreamed of; certainly more often than the teaching of the authorities would have us to believe.

6. That some of the apparently most hopeless cases are cured by repeated operations.

7. That all suspicious cases should be submitted for microscopical examination, for the reason it is the only scientific method of reaching a diagnosis.

8. That local treatment is not equal to curing these cases; permanent results are to be had by a radical destruction of diseased tissue or the habitat of the tubercle bacilli.

9. That these cases are and have been cured, and that sufficient time has elapsed for us to conclude that they will remain cured.

10. That early and repeated operations if need be are imperative, if these cases are to be permanently cured.

CONGENITAL STRICTURE OF THE RECTUM: A CLINICAL LECTURE.

BY CHARLES GREENE CUMSTON, B. M. S., M. D.,

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BOSTON, MASS.

Gentlemen: This young girl of nineteen years has been brought to us by her mother for two symptoms, namely, constipation and peculiar ribbon-like shape of her stools. She has always been a healthy child in every respect, menstruating at thirteen, regularly and without pain, but for the past few years she has noticed the condition of her feces just mentioned.

Examination of the external region of the anus shows nothing abnormal; there are no cicatrices, hemorrhoids, nor fistulæ. The anus is well formed, and I can find no induration in its contour.

Now introducing my index finger into the rectum, I find that it enters easily for about five centimeters, but at this point it is prevented from going further. The obstacle appears to be a kind of diaphragm with a small and nearly central orifice. If I pass my finger through this opening, which can be done with some difficulty, the lower part of the diaphragm is found thicker than the upper, while the contour of the orifice seems quite regular. The mucosa of the rectum is normal, and there is no proctitis, ulceration, nor purulent discharge.

We are dealing with a case of congenital stricture of the rectum, and as this is an interesting subject, I would like to consider it with you at some length. Gosselin some years ago said that congenital stricture of the rectum has for an essential character to be composed of a kind of thin appendix, projecting from the walls of the rectum into its lumen, but in all cases the intestinal walls are healthy. Usually these strictures present the aspect of a diaphragm with an orifice at the center, and our patient of this morning is a most typical example.

Sometimes the diaphragmatic opening will be crescent shaped or valvular. Roser has seen the valves situated opposite one another like the sigmoid valves of the aorta. Curling describes a specimen in which multiple bands were stretched across the gut like bridges, and left narrow openings between them.

These strictures, which are always single, will be found at from three to five centimeters from the anus; infrequently they may be situated higher up. This fact is explained by the manner of development of the terminal portion of the intestine. At the point of implantation on the walls of the rectum a valvular stricture measures a few millimeters in thickness; its free borders are thin and regular. Histologically it is formed by coaptation of the two neighboring portions of the rectal mucosa, and this is normal above and below the stricture.

What I have just described represents a typical case of congenital stricture, but clinically we rarely meet with cases presenting these features so distinctly, for the reason that other lesions arise which complicate the original affection.

Now, how can we explain the fact that the symptoms of congenital stricture only occur many years after birth? In early life the lesion is made up of a kind of membrane of purely

mucous structure, and is of course very elastic. With this we have a good condition of the muscular coats and a free liquid secretion produced as much by the glands of the digestive system as by the submucous tissue, which is irritated by the contact with the feces; all this renders defecation very easy. Now, if the above-named conditions are impaired and constipation increases from an accumulation of the fecal mass above the stricture, the constant irritation finally produces a chronic inflammation in the valves of the stricture, which soon lose their elasticity, and produces a true proctitis above the stricture. This is in the beginning of moderate intensity, but will finally become very marked both in depth and extent of the lesion, so that we find ulceration and granulations on the mucosa with embryonic cell infiltration of the underlying tissues. Then will appear serious and severe symptoms, such as peritonitis, fistulæ, peri-rectal abscess, etc.

If the progress of the proctitis is slow, the attending ulcerations and muco-purulent discharge soon bring about a sclerosis as well as general ill-health. The fibrous changes of the walls of the rectum may extend quite far up, and may be mistaken for a carcinomatous or more especially a syphilitic stricture. This condition is far from being typical, and as I shall point out, you will see how difficult a diagnosis may be, and it can readily be understood why Allingham and other well-known surgeons consider these cases as syphilitic strictures.

As to the pathogenesis of congenital stricture, it is generally admitted that these valves, situated at the meeting point of the posterior intestine and the oval ectodermic invagination, represent the remains of tissues which separated the anus and rectum at a certain period of evolution, and which, in the normal course of events, would disappear by absorption during future evolution of the individual. The presence of these valvular folds is in relation to an arrest of development occurring about the third or fourth month of intra-uterine life.

Before opening exteriorly, the large intestine terminates in a cul-de-sac which corresponds to the region of the anus, from which it is separated by a certain thickness of tissue without any perforation. Later on the anus becomes depressed like a finger glove toward the skin and also forms a cul-de-sac which

little by little extends toward the intestine, and which then comes nearer the anus. Soon there only remains a membrane, very similar to an imperforate hymen, between the two organs. This membrane finally perforates and disappears, thus completing the development of the region.

Now if, when once the ano-rectal membrane is perforated, an arrest in development occurs, this membrane will not completely disappear, and its remains form a congenital stricture.

The clinical evolution of congenital stricture of the rectum may be divided into three periods, which correspond almost exactly to the successive stages occurring in the progress of the lesions. During the first period, which usually comprises from birth to middle age, the affection is simply in a latent state, and is not suspected because it does not give rise to any symptoms. Exception must be made of two cases reported by Boeckel in 1881, which presented a prolapsus of the rectum, due, without any doubt, to a congenital stricture, and in mentioning these let me say a few words regarding the mechanism by which this accident occurred.

Being an obstacle to the free passage of the feces in the intestine, the stricture produced exaggerated contractions of the intestine above it, which little by little drove it down, and a time came when the stricture came out of the anus, the rectum being turned inside out, and the stricture was seen.

Usually all that is noticed during the first period are the physical signs that are by chance discovered, as for example in a patient who consults you for hemorrhoids or some affection of the anus, and it is by digital exploration of the rectum that the valvular stricture is discovered. But usually patients are not seen until the functional disorders oblige them to seek medical advice, and then commences the second period.

The constipation, which for many years had not attracted the patient's attention, becomes more and more pronounced, and the stools are passed with difficulty and infrequently. Patients get relief by enemata and purgatives, but only for a while. The pain, which is always present during defecation, varies from a simple feeling of weight in the lumbar region to a recto vesical tenesmus and paroxysms of pain of such intensity that the patient avoids going to stool rather than suffer; sometimes he becomes hypochondriac.

The caliber of the feces is changed. After having progressively decreased, they finally look like long cords or are ribbon-shaped, as in our case this morning. It is at about this time that the chronic proctitis proclaims its presence by all its symptoms. Constipation alternating with diarrhea, continuous and hot pains during defecation, and a muco-purulent discharge with a very offensive color are usually enough to excite the patient's attention, and these accidents are not long in making themselves felt throughout the economy. The appetite diminishes, the patient loses strength and flesh, and if something is not done the complications of the third period will soon appear upon the scene.

Among the complications of the third period I would more especially call your attention to fistula. If you carefully explore one of the fistulæ, if it is complete, you will find that its internal opening will be *above* the stricture. If, however, this is not the case, it will be found to terminate in a peri-rectal abscess in the cellular tissue, and which may nearly completely surround the rectal walls without producing any changes in them. These fistulæ are nearly always several in number, and rapidly multiply. They will only close up if proper surgical treatment is directed to the stricture itself, and when this has been successful, they rapidly heal.

Very severe inflammatory phenomena may occur, sometimes even being the cause of the patient's death. These are peritonitis and pelvic abscess due to extension of the inflammatory process. You consequently see that with such possible dangers it is the duty of the surgeon to interfere early, choosing the operation that will be best suited for each particular case after a thorough rectal exploration has been made.

In making your diagnosis of this condition, the first question to be decided is: Is there a stricture of the rectum? and secondly: Is the stricture congenital? As to the first, the history of your case and statements made by your patient regarding the functional disorders will be sufficient to make you suspect the lesion.

But in order to be perfectly sure of your diagnosis you should never neglect a digital exploration of the rectum, and by this means you may be able to discover if there is any organic obstacle in the interior of the rectum. This superficial examina-

tion will allow you to eliminate strictures due to other causes, as for example a compression of the rectum by uterine displacements, pelvic tumors or inflammation.

Now if a stricture is found, the question arises, Is it congenital? Before we enter into the subject of differential diagnosis of rectal strictures, let us first consider the principal characters of congenital stricture. I have already pointed out that the symptoms observed are not in any manner peculiar to this affection, but much importance must be given to the following physical signs: When a *single* stricture is found situated between three and five centimeters from the anus and presents the form of a diaphragm with an opening in its center, and if this membrane is soft, depressible, and irreducible by the finger, you can be sure that the stricture is congenital.

Such typical cases are infrequently met with, however, and they are changed by other additional lesions which may lead you into error, and in these cases you must eliminate cicatricial, inflammatory, and muscular strictures as well as carcinoma or syphiloma of the rectum.

Cicatricial and inflammatory strictures are due to traumatism of the rectum, such as wounds and tears, as well as being the result of surgical operations for the removal of neoplasms or the excision of fistulæ. Stricture due to dysentery is infrequently met with, but unites physical signs similar to those found in the congenital variety. Dysenteric stricture is almost always met with in the male, particularly in soldiers who have served in warm climates. They are usually multiple, as are the ulcerations which preceded them, and the bands of tissue, instead of being transverse or perpendicular to the axis of the rectum, are oblique and often spiral and very resistant. The symptoms of the dysenteric strictures, such as pain and difficulty at stool, are less marked than in the congenital type, while the general condition is usually very good.

Muscular strictures are simply an hypertrophy of the muscular layers of the gut, and are consequently circular, and are thicker than the congenital variety as well as involving considerably more of the walls of the rectum. They can be reduced occasionally by digital compression, but as soon as this is removed they reappear. They are seated near the upper border

of the internal sphincter, in the neighborhood of an internal opening of a fistula, and have also been met with in some cases of fissure.

Carcinomatous stricture is usually met with in subjects over fifty years of age. The beginning is marked by symptoms of considerable importance, such as hemorrhage; their progress is rapid, and cachexia appears at an early date. Pain is almost continuous and severe, shooting in various directions. Digital examination most always will bring away a bloody discharge.

A bleeding, irregular, fungous mass is felt, and if the neoplasm has not advanced too far, the finger can be made to pass above it. When the neoplasm encircles the gut, which is infrequent, a large mass will be felt extending over quite an amount of the surface of the rectum.

Syphilitic stricture will often take on the aspect of the congenital type, when the latter has undergone fibrous changes. The progress of the lesions is very similar, being slow, while difficulty at stool becomes more and more pronounced. A discharge appears as well as pain during stool, and little by little the feces diminish in size. Rectal examination discloses a hard, fibrous, annular stricture. But if you make a careful examination, you will notice that the stricture feels more like the valve of the pylorus seen from the duodenal side, and a syphilitic stricture is funnel-shaped, hard, and inextensible, while the congenital variety feels and looks more like a diaphragm. In syphilitic stricture the pain is more severe, and the discharge is of a dirty rose color and very fetid.

Externally you must look for fissure, indurations, and condylomata, which, if they are present, would make you suspect the presence of syphilis. In doubtful cases antisyphilitic treatment may be tried, although in those cases that I have seen, and which were clearly specific, little or no benefit was derived.

The four principal methods of treatment of congenital stricture of the rectum are dilatation, cauterization, incision, and extirpation. Dilatation may be either progressive or rapid. Progressive dilatation is of old date, but is still employed. Hegar's uterine sounds answer the purpose well. Beginning with size that passes the orifice of the stricture with ease, you introduce successively larger sizes, but with care and without violence,

lest you lacerate the parts or make a false opening. Imprudently done, this method may give rise to serious accidents, ending fatally. This treatment is long, and only will give the patient relief.

Forced dilatation or divulsion is dangerous, and the results are so poor or even *nil* that I would not advise you to undertake this method of treatment. Cauterization should be rejected completely, and in fact is no longer employed.

Proctotomy is a measure hardly worthy of your consideration. Wiseman incised a stricture with a button-pointed knife, but the wound soon closed and the stricture was just as bad as before the interference. Multiple incisions were then advised, and are actually employed for thin and slightly vascularized congenital strictures and when sclerosis of the membrane has not taken place. The incisions are carried down to within a few millimeters of the rectal wall, but in order to prevent the occurrence of hemorrhage the tissues are then torn with the fingers down to the gut. After these incisions, dilatation with rectal bougies should be commenced, increasing the size of the instrument, otherwise the incisions would close up and the result of the interference would be lost.

Internal proctotomy is a bad operation in itself, and exposes the patient to hemorrhage, septic cellulitis, and fecal infiltration, and should be put aside as both dangerous and useless. If fistulæ are present extending up behind the stricture, linear proctotomy may be performed after these have been opened and curetted. If no fistulæ exist, the operation may be executed as follows: A straight incision is made from above the stricture to the anus, and the cavity packed with antiseptic gauze. Dilatation must be performed after this operation, which, although not giving a radical cure, will at least obtain a prompt and marked amelioration of the symptoms.

But of all the operations that have been devised, it would appear that excision is preferable in cases of uncomplicated congenital stricture. It is performed as follows: Dilatation must be done until the stricture is easily within the surgeon's reach. Silver wire is then passed through the base of the stricture, which can then be drawn down quite near the anal orifice. Next you make a circular excision of all the projecting tissues with either

knife or scissors, which will result in a raw surface, above and below which the ends of the wire pass. The borders of the wound are next brought together by sutures, and by this means you re-establish the continuity of the rectal mucosa.

As to resection of the rectum by Kraske's operation, it is indicated in cases of long standing with marked inflammatory lesions of the rectum, but its application to congenital rectal stricture appears to me small, and I have only seen one case in which this operation was indicated and performed, on a woman of about thirty-five years of age, resulting in complete recovery.

As to the treatment of the young girl shown to you and who was the subject of this lecture, I have advised her to undergo excision of her stricture, which I feel sure will result in a complete success, because no complications have as yet occurred, and as she is still young and in good health, the parts will be elastic, and thus render the operation quite easy to execute.

871 Beacon Street.

DISEASES OF RECTUM AND SIGMOID AS A FACTOR IN GENERAL DISTURBANCES.*

BY J. R. PENNINGTON, M. D.,
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Alienists and neurologists of to-day claim that the discovery of the neuron theory, the establishment of the modern doctrine of cytology and the researches of bacteriology and physiological chemistry, have at last removed the barriers to a comprehensive investigation of mental and nervous diseases; and, through the two latter sciences more especially, a new field seems to have opened up for their edification, and the rectal specialists have discovered them searching for this new truth and light in the gastro-intestinal laboratory.

Dr. Van Gieson, in the *New York Hospital Bulletin*, October, 1896, says that "the progress in bacteriology and physiological chemistry has gone far to demonstrate that most of the processes of disease in general are due to toxic substances in one

*Read before the Surgical Section of the Mississippi Valley Medical Association, at Louisville, Ky., Oct. 6, 1897.

form or another; that much of the present obscurity in the pathogenesis of nervous and especially of mental diseases is largely to be explained by the very simple fact that the brain and the rest of the nervous system have been studied altogether too much as a something apart from the rest of the body—as something beyond the jurisdiction of the laws of the great fundamental pathological processes which operate on the whole organism; that it is absolutely necessary for a lucid understanding of the pathogenesis of nervous and mental diseases that we correlate and homologize the nervous system with other organs and tissues of the body in the study of the effects of a few fundamental pathological processes which underlie mental and nervous as well as diseases in general."

The thought herein suggested seems to me to express pretty clearly the relations which obtain between general disturbances and diseases of the rectum and sigmoid, and suggests very vividly to mind the importance of correlating them also.

A. McLean Hamilton, in a paper read before the London Medical Society, in 1896, stated in the course of his remarks, that "protean neurosis, neurasthenia, is closely connected with some form of disturbed intestinal function," and, basing his opinion on the works of Bouchard, McPherson, Eccles, Turner, and others, said that he believed that many of the acute insanities are due to primal intestinal disorders, and conjectured whether or not cases of chronic psychoses are not more or less modified by the same agencies, and this being true, whether we should not, in the future, direct our plan of treatment more to the relief of these disorders and place less reliance on the use of the conventional narcotics and other familiar modes of treatment; and further declared that some forms of melancholia are undoubtedly due to auto-intoxication dependent upon impaction and copremia, although the passage of an apparently sufficient amount of fecal matter may incline the observer to ignore the existence of constipation as a cause, and cited cases in evidence of his position.

My friend, Dr. H. M. Bannister, formerly senior assistant physician of the Kankakee Insane Asylum, Illinois, says that he has seen cases of melancholia relieved and the patients leave the Asylum apparently practically cured by simply relieving the colon of a mass of putrefying fecal matter.

Dr. Daniel R. Brower, in a paper before the Illinois State Medical Society, May last, stated that "gastrectasis, intestinal dyspepsia, and coprostasis are present in ninety-nine out of every one hundred neurasthenic cases; that if we can keep the stomach, small and large intestines in a state of functional activity and healthfulness, we can relieve ninety-nine out of every one hundred cases of nervous disorders, excepting the comparatively few cases that are serious, such as organic diseases of the brain and spinal cord, and even these cases are vastly improved by directing attention to the abdominal cavity."

Ewald, in his treatise on Diseases of the Stomach, says that "every disease of the stomach affects the intestines and liver, and *vice versa* every disorder of the latter is reflected upon the former."

It is also claimed by others than neurologists and alienists, that the *materies morbi* of such other diseases as gout, rheumatism, headache, uremia, chorea, asthma, diabetes, skin and many other diseases, are also generated in the alimentary tract. Hence the consensus of opinion seems to be that the *materies morbi* of a vast number of somatic, mental, and nervous diseases have their origin somewhere in the gastro-intestinal tract. In just what part of the canal these poisons are generated, however, seems to be somewhat of a mooted question, yet the experiments of Baumann, who found by making a fistula in the lower portion of the small intestine, just above the colon, that indol, skatol, and other ethereal sulphates disappeared to recur again only when the intestinal contents were allowed to repass through the colon, seem to show quite conclusively that these putrefactive processes are carried on principally in the lower bowel.

Already the practice of many physicians is getting upon new lines, as evidenced by the fact that physicians and surgeons, whether specialists or not, are beginning to recognize that the primal seat of infection is, more frequently than formerly suspected, in the vicinity of the rectum and sigmoid. This is exemplified by the increased interest taken by the profession in the diseases of these structures, as well as by the marked attention which is being given to curing them and ridding the lower bowel of putrefying fecal matter.

C. K. Clark, *American Journal of Insanity*, July, 1897, in referring to the treatment of auto-intoxication, uttered an impor-

tant truth when he said, "that some lose sight of the fact that autoxis is merely a secondary condition, and that the primary defect is overlooked in the anxiety to correct the influence of toxins; that the therapeutic means adopted simply temporize and do not aim at curing the original lesion." He then urges that we endeavor to take broader views than that of mere local or symptomatic treatment, and establish what Van Gieson styles cytothesis, by means which prevent the production of toxins, rather than to rest satisfied with neutralizing them when in existence. I dare say that in many instances physicians in searching for the etiology of disease due to some auto-intoxicants fail to locate the primal defect because they do not look more carefully into the condition of and make a more thorough examination of the rectum and sigmoid.

Byron Robinson, in MATHEWS' QUARTERLY JOURNAL OF RECTAL AND GASTRO-INTESTINAL DISEASES, July, 1896, reports that in two hundred cases he found adhesions of the sigmoid in 170 of them, or in 85 per cent., and attributes them to the irritating effect of the psoas muscle on the bowel when the latter contains pathogenic germs. I was unable to gather from the paper whether these adhesions were determined by macroscopic or microscopic examination. The average length of the meso-sigmoid is about three and a half inches, which permits, as you can readily see, of quite a wide range of motion. Curtailing this physiologic freedom of the sigmoid by adhesions at once renders it pathologic, which favors and invites constipation. In the same proportion that these adhesions interfere with the peristalsis and function of the sigmoid, to the same degree will compensatory peristalsis of the colon be required to force the fecal mass through the sigmoid and on into and out through the rectum and anus. Herein, perhaps, lies one of the many causes of constipation and its evil effects—putrefaction, copremia, and auto-intoxication, with their attendant disturbances. Now recalling the fact that the rectum, including the anus, is the termination of myriads of nerve fibrils of all varieties, that its diseases, as Mr. Allingham says, "are among the most common that affect civilized humanity," that because of its function, position, and intimate relations with other organs and parts, any pathologic condition existing within it must of necessity be in a state of almost constant irri-

tation, I do not see how any one could possibly conceive of a more typical or vulnerable point for the primal origin of protean reflex neuroses. These reflex neuroses may manifest themselves in a multiplicity of ways, and clinical observation is not wanting to demonstrate that they are capable of producing any and all of the neural, mental, and somatic disorders referred to in this paper, and many more.

I do not wish to leave the impression, however, that rectal or sigmoid diseases, either directly or indirectly, are accountable for all the ills to which human flesh is heir—far from it—but I do desire to impress upon your minds the fact that they are much more frequent, and are accountable for a great many more general disturbances, than is usually supposed, and that no class of diseases more secretly infect and undermine the constitution. Strange as it may seem, yet because of the peculiarity of the nerve supply to the rectum and anus, trivial affections of these parts are often looked upon by the patient as serious, while truly serious and dangerous conditions are treated as if of no vital importance whatsoever. To illustrate how easily pathologic conditions of these structures may be overlooked, and their importance through the reflexes in general disturbances, I will briefly append a few cases:

Case 1. Mr. H., aged thirty-four; commercial traveler. Had not been able to work for eighteen months because of a supposed stomach trouble. Had lost thirty-five pounds in this time, and had been treated during this period by some able physicians for indigestion. Finally, because of a slight constipation, he was referred to me for its treatment. Examination revealed an annular stricture of large caliber located about two inches above the anus, for which I operated at the Polyclinic Hospital. On divulsing the sphincter I found that this stricture was due to an old ulceration of which he had no knowledge and could give no information. The stomach trouble disappeared within a few days after the operation, and his bowels have been regular since.

Case 2. Mr. B., aged sixty-seven; was referred to me January last, by one of his physicians. This patient had in the previous year consulted ten different physicians and surgeons, including some of our best surgeons and pathologists, for hemorrhoids and vesical calculi. Each assured him that he had neither

trouble, but that his suffering was caused by an enlarged prostate and constipation. Examination revealed a number of large hemorrhoids, which I removed at the West Side Hospital in the presence of eighteen or twenty physicians. Before operating I suspected stone in the bladder, but he refused consultation or examination, as he had been assured by an eminent surgeon that none existed. A few days after the operation, because of intense suffering, he very reluctantly consented to a consultation with a genito-urinary specialist. I thereupon requested my friend, Dr. G. Frank Lydston, to see him, who found and removed a calculus the size of an English walnut and enucleated the prostate.

These cases illustrate the necessity and importance of a thorough examination of the rectum, and show how easy it is to be deceived. No class of diseases is of more importance to the general practitioner than those occurring in and around the sigmoid, rectum, and anus. Every sufferer from constitutional troubles does not necessarily have a rectal disease, yet I unhesitatingly say that every individual who has a pathologic condition of these structures will, sooner or later, if it is not removed, be the victim of some general disturbance which can not possibly be cured as long as this pathologic condition remains. Many a victim, doubtless, has carried a neurosis to the grave, who simply for the relieving of a pathologic rectum would have enjoyed the blessings of this life. I have seen a number of cases of so-called hysteria cured by simply relieving a rectal irritation, and could cite many cases did time and space permit. Our inability to locate the primal cause of a patient's suffering should not clothe us with authority to stamp him an hysteric.

Case 3. Mr. H., a prominent citizen of Louisville, who was supposed to be dying from the effects of cancer situated somewhere in the abdominal or pelvic cavity, was completely restored to health by my friend, Dr. J. M. Mathews, who diagnosed and relieved him of a simple anal fissure. In this case the patient was said to be suffering from cancer instead of hysteria, because the irritation causing his supposed affliction did not happen to manifest itself in the form of hysteria, but copremia and the effects of auto-infection through the reflexes.

Case 4. Mrs. B., aged twenty-three, of Idaho, came to see me February last suffering from mental aberration, which was com-

pletely relieved by curing her of hemorrhoids and rectal ulceration.

Dr. H. A. Hare, in *Medicine,* July 1896, reports a case of epileptiform convulsions cured by relieving a chronic constipation. W. Lowe, in the *Intercolonial Medical Journal,* Melbourne, Australia, June, 1896, reports a case of sciatica associated with what seems to have been proctitis relieved by curing the latter. My friend, Dr. J. B. Bacon, in a paper read before the Chicago Medical Society, the 15th ult., stated that recently two cases had been referred to him for celiotomy, and that careful examination revealed the supposed pus tubes to be the sigmoid filled with fecal matter.

The few brief opinions and cases herein quoted and reported will serve to show that diseases of the sigmoid and rectum are an important factor in general disturbances, and therefore are of much importance to the general practitioner.

Columbus Memorial Building.

INTERNAL HEMORRHOIDS.*

BY A. B. COOKE, A. M., M. D.,

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Mr. President and Gentlemen: The Father of Medicine regarded internal hemorrhoids as a "defluxion of pituitous matter to the hemorrhoidal veins, whereby was evacuated the black bile or melancholic humor," thus assigning to them an important office in the regulation of the vital functions. Following the teaching of their illustrious master, nearly all the conspicuous names among the ancient writers will be found subscribing to this view. And not until many centuries later, when Harvey's great discovery made scientific medicine possible, did the pathology of the disease begin to be understood.

But even the present century, with all its vaunted superiority, has not lacked for able advocates of vagaries almost as absurd. Scarcely more than sixty years ago the celebrated Trousseau

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contended that the bleeding from internal hemorrhoids served a salutary purpose, and recommended that suppositories of tartar emetic or cupping glasses be employed to reproduce them when "suppressed."

Among the authors of the present generation there is no contention as to the pathological nature of the disease; but the close student will not fail to note many discrepancies upon minor points in the modern literature of the subject.

To the intelligent comprehension of this disease two basic facts seem to me essential: The first is that always and under all circumstances piles are pathological. I do not wish to be understood as holding to the opinion that hemorrhage from this source may not, in exceptional instances, act as a conservative process; but merely as maintaining that the condition which renders the hemorrhage possible is invariably abnormal, and with rare exceptions furnishes proper occasion for the application of remedial measures. The second fact is that neither the hemorrhage nor the tumors, nor indeed both together, constitutes the disease. Rightly conceived, these are but symptoms. To employ the eminently correct designation of Bodenhamer, the "hemorrhoidal disease," properly considered, has to do with factors precedent to such local expression. As regards the hemorrhage, there is no one at all experienced in this line of work who will not admit that hemorrhage is merely a phenomenon, inconstant, and valuable only as confirmatory evidence in the question of diagnosis. And again, cases are not rare in which the true hemorrhoidal condition exists, exhibiting hemorrhage and the whole array of subjective symptoms, yet without the presence of organized tumors. It has seemed to me, therefore, without going beyond the local condition, that hemorrhoids might be properly defined as that state of the hemorrhoidal veins marked by dilatation and varicosity of their distal extremities, and resulting, if long continued, in the development of vascular tumors. The term itself is an unfortunate one, meaning literally nothing more than hemorrhage. Reason for its original application to this special malady we understand and can excuse. But its existence in the nomenclature of to-day is only another of the grotesque courtesies which modern medicine pays to the memory of the old masters.

Hemorrhoidal tumors naturally divide themselves into two great classes, external and internal. The former are located outside the external sphincter, covered by skin, and can not be introduced within the rectum, or, if so introduced, will not be retained. The latter are situated above the external sphincter, covered entirely by mucous membrane, and, when protruded, are capable of being returned within the rectum and retained there. These differences are clear cut and easily recognized; yet the mistake is often made by physician as well as patient of attempting to procure relief from the pain attendant upon the external form by forcing the tumors above the grasp of the angry sphincter. Another class may also be recognized which partakes of the characteristics of the two mentioned, and is in fact simply a combination of them. To it the name entero-external or externo-internal is applied.

Coming at once to the etiology of internal hemorrhoids, to which variety subsequent remarks will be limited, we enter upon a broad and fertile field. In the causation of this, as of practically all other rectal diseases, the blood supply of the part has most to say. Rapidly reviewing it, you will recall that the pouch of the rectum is supplied exclusively by the superior hemorrhoidal artery, the terminal branch of the inferior mesenteric, and that the blood from the corresponding area is returned by means of the inferior mesenteric vein into the portal circulation. Now, bearing in mind that all the radicles of the portal system are destitute of valves; that the hemorrhoidal veins, ascending for about three inches immediately beneath the mucous membrane, perforate the muscular coat at right angles and converge between the muscular and peritoneal coats to form the inferior mesenteric, and that for approximately two thirds of the time man maintains the erect attitude, we have the anatomical facts which explain the tendency of this region to assume a state of varicose turgescence.

Here, as in reference to diseases in general, the causes may be classified under two main heads, viz: predisposing and exciting. Not to weary you with useless detail, I summarize with the briefest possible comment:

Predisposing Causes. The anatomical structure of the parts is entitled to first place under this head. In addition to this

there is a long list of other causes, some of which, scarcely less fantastic than ingenious in their conception, have furnished the occasions for keenest controversy. Standing, in my opinion, at the head of the predisposing causes which are universally admitted though accorded different degrees of significance, is (*a*) The state of the portal circulation. Any thing that prevents the portal vein from emptying itself freely into the liver must result in damming the column of blood back into its several radicles, thus producing engorgement and congestion of their distal extremities. No other organ in the body is so frequently subject to this condition. Indeed it may be properly regarded a normal condition under certain habitual circumstances, for after every meal and during the continuance of the digestive process the contents of the portal vein and its branches are enormously increased and the liver itself in a state of physiological congestion. In a pathological sense also this condition obtains in certain cases with a regularity and persistence worthy of a better cause. Among all human ailments none is more widely prevalent than that popularly known as torpid liver or biliousness, the exact nature of which it is far easier to surmise than to demonstrate. But we know from clinical observation that at such times the hemorrhoidal condition is peculiarly liable to develop, or if already present, to undergo acute exacerbation. (*b*) Closely associated with the cause just mentioned are those agencies which tend to its production—improper diet, indolent habit, sedentary life; in short, violation of hygienic law. The gourmand and the sluggard are conspicuous among the victims of this disease. (*c*) Sex. There would probably be little disproportion in the liability of the two sexes to this malady were it not for pregnancy, style of dress, inactive life, etc., of women, all of which are counted predisposing factors. Fewer cases are encountered among them, however, doubtless because of their greater familiarity with pain and hemorrhage, the two symptoms which drive man post-haste to seek medical advice, and native modesty. (*d*) The question of the influence of heredity has long been a mooted one in this no less than in other diseases. We dismiss it by remarking simply that if there is truth in the generally accepted theory that a peculiar condition of other organs predisposing them to certain affections can be inherited, there is no valid

reason why the same might not apply to the rectum. (*e*) Age is a predisposing cause only to the extent that the majority of cases develop after maturity, both infancy and advanced life being comparatively exempt. (*f*) Climate. One of the many odd fancies entertained by the ancients was that this disease was especially prone to manifest itself in the spring when a northeast wind prevailed. But other influences than naturally result from the modification of diet, dress, and habit, incident to the different climates and seasons, would scarcely be admitted in this matter-of-fact age.

Among exciting causes: (*a*) Constipation and the act of defecation easily merit first consideration. It is the existence of the former which renders the latter operative, and its *modus operandi* is plain to understand. The passage of costive stools always requires strong muscular effort, and takes place in a direction opposite to the return blood current. The fecal mass acts as a mechanical impediment to the circulation, and as it descends in defecation forces the contents of the veins before it with sufficient violence to cause extreme dilatation of their terminal extremities, sometimes even rupture. An additional and weighty truth in this connection is that the voidance of such a stool and the straining which accompanies it necessarily produce great irritation of the swollen and congested surfaces at the outlet of the bowel, resulting not infrequently in noticeable traumatism. (*b*) The abuse of purgative medicines acts as exciting cause in several ways. In the first place, their after-effect is uniformly to increase the very condition which called for their use. Thus, what in the beginning might have been merely costiveness, is soon converted into a true disease, namely, constipation. Again, the majority of the agents of this class act as irritants to the intestinal mucous membrane, some of them seeming to expend their chief influence upon the rectum and colon. The result, if their use is persisted in, is chronic congestion of these parts. This added to the constipation which their constant employment certainly tends to confirm, constitutes an etiological factor not always recognized, but operative, doubtless, to an extent almost incredible. I stop here to say that the physician owes it to his clientele and to his profession to raise his voice in condemnation of this pernicious and widespread habit, and in denunciation of

"Carter's Pills," "De Witt's Little Early Risers," and the whole list of patent purgatives, with advertisements of which current literature literally teems, and the consumption of which is simply appalling. (*c*) The presence of other diseases of the parts, "ubi irritatio, ibi affluxus." (*d*) Certain articles of diet seem occasionally to act directly as excitant causes, either in producing the disease or in lighting up an acute attack. Many instances of this are on record. But it is probable that the result is a secondary one, brought about through derangement of the liver function. (*e*) Few women pass through the pregnant state without suffering more or less severely from this complaint. Pressure upon the parts and obstruction of the circulation are the chief factors involved. Abdominal and pelvic neoplasms often act in a similar manner and to the same end.

Numerous other causes are mentioned by writers upon the subject, such as spasmodic contraction of the sphincters, abuse of the venereal pleasure, emotional excitement, etc. But those above given are certainly more direct in action, less fanciful in conception, and sufficiently explanatory of the frequency of the disease.

The symptoms of internal hemorrhoids vary with the stage of the affection. In the beginning scarcely more than a sense of fullness and slight discomfort about the terminal portion of the bowel is felt. And as a rule not until hemorrhage occurs or the tumors portrude is the patient led to apply for treatment. The former (hemorrhage) usually follows defecation, and may be excessive in amount. Cases are recorded in which the quantity lost is expressed in pounds, and described as occurring daily for weeks. When large amounts of blood are lost from this as from other sources, a train of symptoms is inaugurated readily referable to the resulting anemia. I have myself had several cases in which operation presented itself as a life-saving measure.

As a rule, protrusion only takes place in cases of long standing; and not until this occurs does pain become a prominent symptom. When extruded and grasped by a spasmodic sphincter there is no condition accompanied by more intense suffering.

In this, more perhaps than in any other rectal disease, are reflex phenomena encountered. These usually express themselves in pain variously referred, even though the part directly involved

be entirely free from such sensation. Not always so, however. Several authors have reported cases of apparently typical epileptic seizures completely relieved by removing internal hemorrhoids. My own experience embraces two cases in which the seizures did not recur for many months after operation, and I have sometimes imagined that a permanent cure might have been effected in both by keeping the rectum and anus in a perfectly normal condition.

The diagnosis of internal hemorrhoids is never a difficult matter. Those cases which present the two symptoms of hemorrhage and protrusion practically diagnose themselves. But neither is essential. In this department of work especially, inflexible adherence to one certain rule is of more worth than the most conclusive array of symptoms. That rule is to require a physical examination of every rectal case before instituting treatment. The importance of this rule can not be too strongly stated. Yet it is violated daily and habitually by men whose integrity and scientific acumen are beyond question. The laity recognizes no disease of the rectum but "piles"—"itching," "blind," "bleeding," or what not,—always piles; and such diagnosis is uniformly ready at hand when the physician is consulted. The profession itself is responsible for the reproach which has so long and so justly attached to the treatment of this class of diseases. And not until the working rule is firmly established of insisting upon seeing what can be seen and feeling what can be felt in every instance, will the pile-salve and cure-without-pain advertisements daily flaunted in our faces cease to rob us of our self-respect and deprive us of profit to which we are justly entitled.

A mistake often made in examination for internal hemorrhoids consists in searching for them too high up the bowel. They are never beyond two and a half inches from the anus, usually less. Except in old cases, where the vascular element has been largely replaced by organized connective tissue, it is extremely difficult to detect them by the sense of touch. But a good light and a bivalve speculum will quickly reveal them, and at the same time permit a careful search for associate pathological conditions which may stand in the relation either of cause or effect to the hemorrhoids.

I can not hope to discuss the treatment of this disease in a manner satisfactory either to you or myself in the few minutes of my time remaining. Its thorough discussion would require a separate paper. But, touching only upon the high places, it will perhaps be possible to present a brief synopsis of its more salient features.

At the outset of the subject, two important practical questions suggest themselves for consideration: First, are internal hemorrhoids ever salutary? and, second, should they be operated on when acutely inflamed? To both we answer, yes. In regard to the first, it is a fact borne out by clinical observation, as well as theory, that hemorrhage from this source in certain conditions acts as a conservative process, and the physician who views it with the eyes of a specialist only may fail to grasp the full significance of the affection. Notable among these conditions are cirrhosis of the liver and organic heart lesion, especially of the mitral valves. Theoretically we would infer that the vent afforded in these diseases to the overloaded venous circulation by such hemorrhage would result in holding in abeyance their more distressing sequelæ, thus adding to the comfort of the patient even though life itself were not prolonged thereby. Practically it has been demonstrated time and again that the rectal hemorrhage so frequently evident in association with these conditions in their later stages, is nature's effort to regulate matters and afford relief. And when the source of such depletion has been removed by the injudicious surgeon, abdominal ascites and other effects of venous engorgement soon manifest themselves. In reference to the second question, the affirmative answer may be more briefly explained. Not often, except when driven by the pain associated with acute inflammation, do patients consult the surgeon for this trouble. Under such circumstances palliative treatment is rarely satisfactory either to patient or physician. And clinically it has been proved times without number that recovery is as speedy and the results of operation altogether just as good as when performed in the quiescent stage.

Now, before taking up the treatment, one prefatory remark will bear repetition and emphasis. Hemorrhoids are always pathological. Palliative treatment is rarely curative. Therefore the surgeon conserves his patient's interest at the same time that

he enhances his own, by invariably recommending operation, unless, of course, it be positively contra-indicated.

Palliative treatment calls for separate notice only because, in spite of the surgeon's advice, operation will occasionally be refused. In such event the point of first importance will be to return the tumors within the bowel—not always a simple matter. If much tumefaction exists, the application of ice-cold water or a bag of crushed ice will usually reduce it. Then by introducing a finger well anointed with a stiff lubricant into the rectum, and making gentle upward pressure upon the tumors with the other hand, they can generally be replaced without great difficulty. In some cases it may be necessary, in order to accomplish this and prevent strangulation and gangrene, to incise the sphincter. Replacement having been effected, the main principles of medical treatment may be concisely stated: keep the bowels well open and their contents soft; active exercise; moderation in diet; free application of cold water after every stool, and the occasional use of astringent applications.

The operative procedures which have been advocated are numerous and varied. More prominent among them are: (1) Dilatation of the spincters; (2) the application of chemical caustics; (3) injection; (4) electrolysis; (5) excision (Whitehead's operation); (6) ligation; and (7) removal by clamp and cautery. Several of these can only be properly regarded as palliative; others are to be condemned as dangerous and unsurgical, and only the three last mentioned are worthy of serious consideration. In exceptional cases the Whitehead operation may be indicated and yield good results. But the frequency with which a slight modification of it, sailing under the magnificent title of "The American Operation," is performed by a certain group of professional nondescripts, calls for strongest censure.

The ligature and clamp and cautery operations are the great rivals for the favor of the American profession. Each has its points of merit and able advocates to maintain them. But the question of superiority remains largely a matter of individual opinion, depending for the most part upon greater familiarity with the one preferred. For this reason, perhaps, I prefer the ligature. But comparing the two methods from the standpoint of general applicability, I am persuaded that the ligature opera-

tion has several important points of advantage, chief among which is its absolute freedom from danger of secondary hemorrhage. In many cases these operations are done in private houses, and the surgeon can certainly feel a greater degree of security in leaving his patient if he knows that the rather large blood-vessels which enter into pile tumors are encircled by a good strong silk ligature, than when they are closed only by a thin crust of burnt tissue.

I should have been glad to enter more in detail into this phase of the subject. But the technique of these operations is more or less familiar to all, and the discussion to follow will doubtless develop the many points which lack of time and the comprehensiveness of my theme have forced me to omit.

Concluding, I desire merely to say that if I have stated any point worthy of special emphasis, that point is the absolute necessity of physical examination before undertaking the treatment of rectal cases. And if what has been said in that connection impresses any one as deserving of earnest consideration, I shall feel that my effort has not been in vain.

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CHRONIC PROCTITIS.*

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Ancient history gives evidence of the existence of chronic proctitis before the birth of Christ. Aretaeus, who lived about 200 B. C., wrote of intestinal ulcers produced by dysentery, and no doubt during all the succeeding generations chronic proctitis has claimed its share of victims. In point of reason we must believe that in those times the people were more subject to all kinds of intestinal disorders than those of the present day on account of their unhygienic surroundings, meager provisions against cold, and the character of food used in the early days of civilization. We thus see that chronic proctitis enjoys a most respectful antiquity, and yet it has never, even to this day,

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received any thing like the study and attention that its importance demands.

The great trouble has been that it was not, in all its forms, classed as a surgical disease, demanding surgical skill in its diagnosis and treatment. The inclination of the profession in general has been, and is yet to a great extent, to allow rectal disorders to run their course obscurely and depend on nature for their cure. Of course, some medicine is always prescribed, but nearly always in this the mistake is made of punishing the stomach for the sins of the rectum, without in any way relieving the rectal trouble.

Fortunately for this class of sufferers the days of treating disease blindly are fast waning, and it will not be long before doctors will more fully appreciate the great injustice they do, not only to their patients but to themselves, by making careless and incorrect diagnoses and instituting irrational treatment. The nearer we treat the human body as the machinist treats his engine, by going direct to the disordered part to make repairs, the nearer we approach the true principle in the practice of medicine and surgery.

The diagnosis of a chronic rectal trouble should no longer be made under cover, but in the glare of reflected rays of light. In making these examinations I use Kelly's proctoscope in nearly all cases. The long speculum is very useful in some cases, but the mucous membrane drops in between the blades or prongs in such way as to obstruct the view, or contorts the lining of the rectum so as to make the examination unsatisfactory. It is also more painful, and the mucous membrane is often pinched.

In examinations with the protoscope the mucous membrane closes uniformly over the open end of the instrument as it is withdrawn. The patient may be placed in the lithotomy or knee-chest position. The latter is preferred when high examinations are to be made, as in this position the sigmoid flexure straightens itself as much as possible and allows the instrument to enter its fold. The instrument I use is nine inches long and one inch in diameter. It can be introduced with very little pain if well lubricated, when the operator is cautious and slow in introducing it. An assistant holds a bull's-eye lantern or an

electric light over the patient's hips, and the rays are reflected into the rectum by a head-mirror. While the proctoscope is being withdrawn every part of the mucous membrane can be inspected.

Chronic proctitis may follow the acute condition caused by either traumatism or some infection. Its first appearance may be of a subacute or chronic nature, this being the case especially when due to syphilis or tubercular infection. Passive pederasty is responsible for a large number of cases in some countries, but as this disgusting and unnatural practice is not so prevalent in the United States as in France, it does not play such an important rôle with us. Gonorrhea is a frequent cause among the demi-monde, as it is very easy for pus from the vagina to run down over the anus and gain access to the rectum. This form of proctitis is not found in men unless they practice pederasty. The irritation produce by hardened feces in persons of constipated habit often leads to chronic proctitis. Inflammation surrounding a hemorrhoidal tumor, where the mucous membrane is in a state of passive congestion, may degenerate into this chronic trouble. In aggravated cases the mucous membrane becomes granular, tumefied, and ulcerated. In these cases the submucous cellular tissue is often invaded, and when the plastic material thrown out into its meshes becomes organized it contracts and causes a stenosing proctitis. We may also have an hypertrophy of the glandular structures and papillomatous vegetations appearing. Hence we have two varieties of non-specific chronic proctitis:

First. Those cases in which a diffuse, persistent inflammation, superficial ulceration, papillomatous vegetations are the prominent features.

Second. Those in which the submucous tissues are principally involved in the hypertrophic process causing the proliferative stenosing proctitis. This latter condition is often engrafted on the first, and both conditions may co-exist in any case.

In the first class of cases ulcerations are rather common, and these ulcers are usually in the lower rectum. This condition follows very readily the acute inflammation, from any cause, in a chronically congested rectum in parties whose power of resistance has been weakened by any cachexia.

The main symptom of this form of proctitis is slight tenesmus with frequent muco-purulent stools, being at times streaked

with blood; indeed, in some cases a large quantity of blood is constant in the discharges and forms the most prominent feature of the case. The sphincter muscle becomes so relaxed in some cases as to cause fecal incontinence. The patient becomes weak and very much emaciated. Unless the inflammation involve the mucous membrane encircled by the sphincter, the patient will experience very little acute pain; however, there is usually a feeling of extreme discomfort in the rectum. When these symptoms have existed for a number of weeks or months you may be sure that your patient is suffering with some form of chronic proctitis, and a thorough examination should be made at once. A digital examination may reveal the presence of ulcers when situated low in the rectum; however, this should not satisfy the physician, even if it be a fact that a majority of the ulcers are within reach of the finger. The entire rectum should be thoroughly inspected in every case, and to do this it is necessary to use the proctoscope. It should be remembered that the mucous membrane of the rectum has, normally, rather a congested appearance, and when healthy may be mistaken for disease if compared with mucous membrane of other parts of the body.

Rest, in the recumbent position, is of paramount importance in the treatment of this form of proctitis. The diet should be of a liquid character, bland and nutritious. It is usually a difficult matter to properly diet your patient unless he be placed in an infirmary and carefully watched, for if treated at home, when he begins to improve and becomes very hungry some improper food will be given in spite of your directions. It is best in most cases to divulse the sphincter muscle, especially when the trouble is low in the rectum. When this is done the patient's bowels should first be thoroughly emptied with an aperient and the rectum washed out with a solution of boric acid; then the patient is anesthetized and the muscle paralyzed. After this the rectum is thoroughly inspected, and any ulcers discovered touched with a solution of nitrate of silver, 40–60 grains to the ounce. Where there is no ulceration but a diffuse chronic inflammation, the mucous membrane should be mopped with silver or copper of the strength of 30 grains to the ounce. The after-treatment consists in putting the patient to bed, washing rectum daily with warm boric-acid solution, and the use of suppositories of iodoform

and boric acid. A very useful injection in this condition is sweet oil and iodoform, 7 grains to the ounce, a tablespoonful to be injected at bedtime. These injections should be given with the hips elevated to prevent the oil from passing out.

In very chronic cases, where the ulcers are extremely indolent, the solid stick of silver or crystal of copper may be used. In these cases it is necessary to make repeated applications before the ulcers become healthy and begin to heal.

It is stated by some authorities that we never find chronic proctitis in children. I can not agree with this statement, as a case came under my care a few years since in a boy four years of age. He had been passing considerable blood every time he went to stool for twelve months, averaging four or five stools daily. I had him anesthetized, divulsed the sphincter and examined the rectum as thoroughly as I could with a speculum. The mucous membrane was intensely red and granular. I applied freely a solution of silver, 30 grains to the ounce, over a surface somewhat larger than a silver dollar. The after-treatment consisted of washing the rectum with a warm boric-acid solution and the injecting of a tablespoonful of sweet oil with three grains of iodoform at bedtime. This little patient was much better the day after the operation, when he passed very little blood. From that time on he steadily improved, and in six weeks was perfectly well. This was over two years ago, and he has had no recurrence of the trouble. During the twelve months he suffered he was continually taking medicine with no relief.

In very sluggish ulcers it is well to scarify or curette them before any application is made. Some works recommend enemata of starch-water and laudanum to relieve pain, but in my experience where much pain exists it is due to some trouble in the sphincter area and is promptly and permanently relieved by divulsion of the sphincter muscle. I do not favor any medication of the rectum except that which is stimulating, antiseptic, or cleansing. In extreme cases, where the above treatment fails to cure and the disease is situated just above the sphincter, involving only a small area, it may be excised and the healthy membrane brought down and stitched to the skin at the anal margin, just as it is in Whitehead's operation for hemorrhoids. Papillomatous vegeta-

tions should be destroyed by chromic acid or the thermo-cautery. When they are high in the rectum and can not be reached with the speculum, the authorities advise splitting the rectum and anus back through the median line to the coccyx, to gain access to the trouble; but I believe we will probably never have a case that can not be effectually treated through the proctoscope. Very rarely a case may present with a tumor too large to be treated in this way.

The main feature of the proliferative stenosing proctitis is the involvement of the submucous connective tissues in a fibrous hyperplastic process which causes a thickening of the rectal walls and subsequent contraction and stenosis of the rectum. In this variety all the normal structures of the rectum are matted and fused together, the normal endothelium is changed, and the glands become atrophied. In some cases the inflammatory process extends into the peri-rectal tissues.

The lower half of the rectum is usually the seat of trouble, and in most cases it does not extend more than one or two inches above the sphincter muscle. There is rarely more than one point of extreme contraction, and there may be a chronic superficial ulcerative proctitis both above and below the constriction. The lumen of this stricture may become very small, but rarely closes entirely, as the passing of feces keeps up a certain amount of dilatation. This form of proctitis usually follows and is a late stage of the chronic ulcerative variety.

For the deep tissues to become affected it is not necessary for these ulcerations to be extensive, but just sufficiently large to admit the infection. In some of these cases we get a history of syphilis, but in none of them have I been able to cause any absorption or disappearance of the inflammatory products by administering anti-syphilitic treatment. So it appears that if the primary lesion was of a syphilitic nature, it only acted as a simple ulcer in opening up the structures of the bowel to deep infection. An inflammatory thickening of the rectal walls due to tubercular infection is usually accompanied by extensive tubercular ulcerations and evidences in other parts of the body of tuberculosis.

A patient suffering with stenosing proctitis will notice an increasing difficulty in defecation. In the morning there is often

a feeling of urgent necessity to evacuate the bowels, but when he goes to stool he strains long and accomplishes little, and does not experience that relief which follows a thorough evacuation. He frequently passes little hard balls of fecal matter, and when the constriction is low, the mold of the fecal mass will somewhat resemble a lead pencil or a small tape. In this condition it is very easy for obstruction to occur from a blocking of the small passage with hardened feces. More can be learned of this condition by digital examination than any other way. Instruments can not be used on account of the constriction. By the finger you can distinguish a diffuse thickening of the rectal walls with a constriction, in many cases, which will not allow it to pass. Strictures due to the healing of ulcers have a different feeling; they are irregular, and sharp bands project into the bowel. Carcinoma of the rectum may be eliminated by the history of the case.

This stenosed condition of the rectum never recedes spontaneously, nor is it benefited by any internal medication. It may be treated by palliative means or dealt with in a radical way. The best palliative method is to dilate as much as possible with elastic bougies and continue to pass them, at intervals, indefinitely. The Wales bougie is to be preferred, as it is hollow, and water may pass through while it is being introduced, to press the mucous folds out of the way and keep the instrument from catching in them. These bougies should not be passed oftener than every five days.

When the stricture is very resistant, an internal proctotomy should be performed to facilitate dilatation. There is little danger in this operation when the stricture is not more than two inches above the sphincter muscle. After internal proctotomy it is generally advisable to forcibly divulse the stricture with an instrument made especially for the purpose. Even after the latter procedure it is a good plan to pass soft rubber bougies occasionally to avoid a recurrence of the stenosis.

Gastro-Intestinal Disease.

APPENDICITIS.

BY E. L. LARKINS, M. D.,
TERRE HAUTE, IND.

The vermiform appendix in man is one of the sixty-five vestigial structures retained while passing through the stages of a lower development, and is the only rudimentary structure found connected with the alimentary canal. It appears to be a remnant of the shortened cecum due to change in diet, habits, etc., of various animals. With the disuse of the organ there comes reversion of type and retrograde changes, or arrest of development of tissue in the embryonic stage. In the male the blood supply of the organ is a small artery arising from the anastomosing arches of the colic arteries. In the female this is usually reinforced by a small twig from the ovarian. Hence the low degree of vitality with which it is endowed, and the consequent ease with which its tissues become the seat of inflammatory or degenerative changes. Add to this the mechanical effect of position, impaction, etc., and the facility with which its structures are invaded by micro-organisms, and we have the appellation "death trap" fully verified. The appendix is attached to the posterior wall of the cecum, from one to one and a half inches below the ileo-cecal valve, is from one half to six inches in length, and its diameter that of a goose quill.

The nerve supply is derived from the superior mesenteric plexus of the sympathetic, a fact always to be remembered in dealing with pain, especially that of an ill-defined character in the abdominal cavity. Peculiarities in the anatomy of the appendicular artery should always be taken into account. In some cases, according to Fowler, branches are given off as the artery passes outward; in others none are given off until the end of the appendix is reached, where it perforates the muscular coat, and branches are directed backward toward the base. The organ is covered externally by peritoneum and lined internally with

mucous membrane containing the crypts of Lieberkühn, and a large amount of lymphoid tissue, thus increasing its absorptive power. The mucous membrane is easily separated from the muscular coat on account of the intervention of a large amount of very loose cellular tissue. This allows ready dissemination of inflammatory exudates, and together with the limited blood supply renders the organ easily congested, or even gangrenous in a short time. In the great majority of cases the vermiform appendix is intraperitoneal, but authors differ as to the exact per cent. In some cases it is partly intra- and partly extra-peritoneal. In such cases perforation would or would not involve the peritoneal cavity, owing to whether rupture takes place at the apex or base of the organ. These may be the cases where an abscess is found, and the appendix lies partly within and partly without the cavity, perforation occurring extraperitoneally. In many cases old inflammatory adhesions make it impossible to tell the original position of the appendix. The mesentery of the appendix is formed by a fold of the peritoneum, and contains the appendicular artery.

The position of the appendix in the abdomen varies, seemingly without any relation to its size, length or attachment to the cecum. But no matter what the position or where situated, "the anterior longitudinal band of the cecum will always run directly to the base of the appendix." The lymphatics of the appendix converge to a chain of glands at its base, and may empty into those of the ovary by passing along the appendiculo-ovarian ligament, thus forming a communication through which septic matter may pass and produce an ovarian or peri-ovarian abscess. A case was recently reported where the patient was operated upon for ovarian abscess and pyosalpinx, and the operator, by digital exploration, finding an appendix distended to an enormous size with fluid, carefully removed the organ. It was found to contain a large quantity of pus, but no symptoms had been present directing attention to it. This may have been the cause of the abscess for which the operation was performed.

Since 1803, when Laennec first gave a complete description of the peritoneum, the combined results of observation, experience, and *post-mortem* examinations have clearly demonstrated that the great majority of cases of peritonitis are due to a dis-

eased appendix. Eliminating puerperal peritonitis and that caused by diseases of the uterus and its adnexa, and we have all but about four per cent. from this cause alone. Laennec, however, did not recognize a connection between appendicular disease and peritonitis, although he gave a minute description of the *post-mortem* appearance of inflammatory diseases in the right iliac fossa; and the writings of the great Dupuytren, as late as 1833, do not associate the two diseases. In 1848 Hancock operated on one case and advocated an early operation in all; but it was not until 1867 that Willard Parker, of New York, first demonstrated by a series of cases that an early operation gave remarkable results when compared with the expectant plan of treatment. From this time on, with the weight of such authority in favor of early operative interference, many surgeons and physicians carefully studied their cases with this end in view, and the conclusion arrived at during the last decade is that *early removal* is the recognized treatment of the disease. While this is true as a surgical principle, it does not follow as a medical maxim. When we consider the great number of cases occurring each year, recognized early and treated empirically or symtomatically, and ending in recovery, we are forced to the conclusion that the necessity for an operation does not exist in every case of appendicitis. That the disease is more often recognized now than in the past, when it was held to be of a different nature, there can be no doubt, and herein lies the misleading factor of statistical mortality. As a rule, statistics are based upon reports made by specialists or surgeons doing a large consulting or hospital practice, and they are necessarily called when the case assumes a serious aspect, either to make or confirm a diagnosis, or to consider the advisability of an operation, or both. Thus they only see the really bad cases, in all of which an operation is demanded. Conclusions reached by reasoning from premises based upon such statistics can not be accurate. If to this could be added the geat number of cases seen by the general practitioner, recognized early and treated in a rational manner, or diagnosed as a different malady and treated empirically with recovery n both, the per cent. of operative cases would be materially reduced.

That the disease is of more frequent occurrence than is generally supposed there can be no doubt, and the statement made by

Carstens, of Detroit, that only one case in a year occurs to every two thousand of the population, and that a physician doing a fair business would only see a case once in about three years, is in my opinion and experience a statement far short of the facts. Doing only a limited business myself, I see on an average from twelve to fifteen cases a year, with two or three of that number necessitating an operation. At one time within the last three months I had under my care four well-defined cases of the disease—one at the hospital, on whom I had operated, and three at their homes, all of whom recovered. I take this as a fair average of the general practitioner. Within the past year, in our city and vicinity, several deaths have occurred from the disease, but whether all were operated upon or not I do not know. There have also been quite a number operated upon with recovery, but I have no means of giving even approximate figures in either case. Thus it is fair to conclude that many cases will recover without an operation, and it is likewise a fact that some will die, no matter when or by whom operated upon. In this connection I might add that I believe some cases of appendicitis die without being recognized, especially those of a fulminant character, where the rapid onset of the disease with symptoms referable to the epigastrium, as pain, vomiting, oppression, etc., followed in a few hours by septic peritonitis, the local disease being so obscured that it is entirely overlooked. The fact that many cases of appendicitis recover without an operation militates against the general practitioner advising an operation in all, for two reasons: (1) He knows many cases will recover without it, and the general fear of the knife will deter many patients from submitting to it unless as a last resort. If he advises an operation in all, many will refuse and recover, and his judgment will soon be doubted by the public. (2) When he turns the patient over to the specialist or surgeon, as a rule the case passes out of his hands. Thus he acts according to the first law of nature, self-preservation, and exercises his judgment and ability in defense of such actions. The hospital surgeon and the specialist with a private institution are placed in a very different light to the public eye, when compared to the family physician, for what the one could do with impunity, the other would be severely condemned. That errors have been made by physicians waiting too

long and lives sacrificed that might have been saved by an early operation, there can be no doubt, and that patients have made the fatal mistake in refusing to have it done is only too sadly attested by experience. This only emphasizes the necessity for a thorough study of all cases in order, if possible, to reach a practical classification and define the symptoms common to each.

Our theories of the causes of appendicitis have changed as our knowledge of the disease has increased. Formerly it was thought to be only mechanical from obstruction of the lumen of the organ by some foreign substance, as a cherry pit, grape seed, etc. Now it is know that these play little, if any, part in the production of the disease. Foreign substances are probably found in the majority of cases, but it is thought that disease of the organ must precede the ingress, lessening its repelling power and enlarging the lumen, especially at the bowel. Anatomical conditions, such as a large opening, length of appendix, and attachment of its mesentery, favor development of appendicitis. When the mesentery of the appendix is short, the organ is usually twisted upon itself, thus preventing free drainage. To the occlusion from the twisting of the organ may be added stricture and fecal concretions, but the effect of the latter is difficult to estimate. A dependent position of the appendix necessarily favors a production of the disease. The interior of the appendix may be entirely cut off from communication with the bowel by closure of its lumen at their juncture, as in a case recently operated upon by the writer. A careful examination with a fine probe failed to disclose any opening. Former attacks had closed the cecal end and produced adhesions difficult to separate. In another case, repeated attacks had caused adhesive bands which finally produced intestinal obstruction, for which the laparotomy was made. The appendix was found to be acutely inflamed, the mucous membrane gangrenous, and the exterior studded with points of suppuration about the size of a pin head. In this case the recuperative power of the bowel is well shown. From six to ten inches above and below the attachment of the appendix the whole bowel was deeply congested, and in spots almost disintegrated. We contemplated removing a part of it, but the condition of the patient would not warrant the procedure. The appendix was removed, the intestines exposed were returned, the wound firmly

closed, and the patient put to bed as quickly as possible. He made a rapid and uninterrupted recovery.

Where the cavity of the appendix is shut off from the bowel and forms a closed sac, the ever present bacteria become virulent by reason of the absence of the antiseptic intestinal fluids. The mucous membrane of the appendix may become the seat of catarrhal inflammation, the same as that in other parts of the body. The fact that influenza causes catarrhal inflammation of mucous surfaces, and that it has prevailed widely and severely in the last few years, is given by some as a cause for the apparent increase of appendicitis in the last half decade. There is no good reason why this may not be true. The crypts of Lieberkühn in the mucous membrane of the appendix may become the seat of typhoid ulceration with subsequent perforation. With an acutely inflamed appendix from this cause the differential diagnosis of appendicitis from typhoid fever, especially in the first few days, is difficult if not impossible. This may account for the presence of a well-defined tumor in the region of the ileo-cecal valve in many cases of typhoid fever, the appendiceal involvement being entirely overlooked. The relative frequency of perforation from typhoid ulceration has been variously estimated, but nothing reliable has been recorded. The appendix may become the seat of tuberculous or carcinomatous disease, but this is said to be very rare. The effect of chronic appendicitis upon the functions of the digestive tract has not received the attention its importance demands. Many of the chronic gastric disturbances, especially those classed under the head of "nervous dyspepsia," are largely reflex, due to the effect of chronic appendiceal disease. This is shown by complete recovery after removal of the organ.

The diagnosis of appendicitis is based upon constitutional and local symptoms, both of which may vary greatly in mild or severe cases. Of the former the temperature and pulse are the best guide, and of these the pulse is the most reliable. The pulse-respiration ratio is not found in appendicitis.

The ratio between temperature and pulse, as usually obtains in the infective fevers, is very seldom found. The pulse will range from ten to twenty beats higher, and remain unduly excited when the temperature falls. This is especially noticeable

and persistent when suppuration takes place, although it is not an infallible sign of such an occurrence. Of the local symptoms, we have pain in the right iliac fossa, which at first is often diffused throughout the abdomen, but later becomes localized, tenderness on pressure over the region of the appendix, rigidity of the right rectus muscle; and in the majority of cases, by careful examination, a well-defined induration can be made out even at a very early stage of the disease. Occasionally the pain may be referred to the epigastric region throughout the whole course of the attack. I distinctly remember one case, occurring several years ago, in which about all that was complained of was a deep, boring pain in the pit of the stomach, confined to an area about the size of a half dollar. In this case the diagnosis was confirmed by an autopsy. The pain in the appendix will often appear to pass directly through to the right lumbar region, and this, together with local tenderness, I regard as a very important symptom of the disease. Coincident with or closely following the beginning of pain, vomiting usually occurs. In the early stages this will often mask the true nature of the disease, and we should be very careful in such cases with our therapeutic measures in order to avoid doing harm, and reserved in expressing an opinion, lest our diagnosis will need to be revised. Especially is this true in acute primary attacks and of exacerbations in the chronic type. The history of a sudden onset of pain, perhaps preceded a few days by a soreness and stiffness in the right side of the abdomen, loss of appetite, and restless sleep, and in many cases a general muscular soreness with aching in the limbs and back resembling the infection of malaria or influenza, should put us on our guard and elicit a very careful examination.

There is vomiting, and the pain, if diffused, soon becomes localized in the right iliac fossa. A pronounced chill or chilly sensation is usually experienced, succeeded in a few hours by a rise of temperature. This will vary from 100° to 103° or higher, owing somewhat to the amount of local disturbance, and will often follow the diurnal curve of temperature of the infectious fevers. Hence the liability to error, especially when local tenderness is not pronounced, since malaria complicates all diseases in many localities. There is this difference to be observed, and a very important one, viz., the subsidence of fever at night is not fol-

lowed by sweating until suppuration occurs, and then the temperature curve will be lower or fall to or below the normal. A temperature of 102° continuing into the second day with a persistence of considerable local tenderness indicates the necessity for an immediate removal of the appendix. The pulse immediately partakes of the local disturbance and rises all the way from normal to 120, owing, as I believe, to the amount of peritoneal involvement. Where the pulse does not exceed 90, an operation will seldom be necessary. Above this the danger increases, and a pulse of 100 or over maintained into the second day warrants an immediate operation. This will be true irrespective of the amount of local tenderness. When suppuration is established, although the temperature may fall and excessive sweating occur during sleep, a high pulse rate is almost always maintained.

Local tenderness in the right iliac fossa, accompanied by pain passing directly through to the right lumbar region, is probably the most important symptom of appendicitis. This is to be differentiated from lumbago and ovarian irritation or inflammation. As a rule the area of greatest tenderness will be over the McBurney point, but when the appendix is long and suppuration is about to take place in the outer third of the organ, tenderness will be greatest over the diseased part. Especially is this true if the end of the appendix overhangs the pelvis. In this case the spot of greatest tenderness will be found at the intersection of a line drawn from the anterior superior iliac crest to a point midway between the umbilicus and the pubic arch with one from the middle of Poupart's ligament to the tip of the ensiform cartilage. In these cases also the functions of the bladder become disturbed, producing frequent micturition, pain, and tenesmus. In the pregnant female abortion is almost certain to occur.

The pain of appendicitis may be of an acute, lancinating, or dull aching character. It is generally, at first, diffused throughout the abdomen, but usually within the first twenty-four hours becomes localized in the right iliac fossa. Occasionally the greatest intensity may be referred to the epigastric region. A peculiarity of the pain from appendiceal disease is that the majority of patients describe it as *passing from the appendix*

directly through to the right lumbar region, as though they were being transfixed with a sharp-pointed instrument. From my experience I regard this as almost pathognomonic of the disease.

The position of the patient in bed with appendicitis is almost or quite as characteristic of the disease as is that of one suffering from pericarditis. The usual position is upon the back, with the right leg drawn up and the left one on the bed kept nearly or quite straight. The shoulders are slightly raised, and the upper part of the body and head inclined a little to the right. It can readily be seen why this position is assumed, as it is the one best calculated to relieve tension and prevent motion in the diseased area. There is inability to lie upon the left side on account of pain from increased tension, and when the change from the back is made the patient will turn completely to the right side and flex both legs upon the body. Occasionally intense pain will be complained of in the right testicle of the male and in the right labia of the female.

Given a diagnosis, what shall be done for appendicitis? If the proposition to operate on every case is the correct one and could be practically carried out, then there would of course be no difficulty in determining what to do and in applying the remedy. But there are so many obstacles, both lay and professional, to such a course that it is impossible at present to carry it to a practical conclusion. If all patients were governed by reason and intelligent advice, instead of fear and superstition, as many of them are, then the practice of medicine and surgery would be more pleasant and satisfactory. To overcome the prejudice existing against the proper use of the knife, plus the net effects of its improper use, will require years of work and education. To some an operation, especially one as they regard of such magnitude as appendectomy, is synonymous with death, and procrastination will usually steal their time away until the operation actually means death. The profession probably takes too conservative a view of the subject, and lives are in this way sacrificed that might otherwise be saved. Only time and careful study and observation can overcome both difficulties. What will be the difference in mortality between those cases subjected to medical supervision and an operation made, when indicated, and those where an operation is made as soon as a diagnosis has been

established? Obviously not very great, but herein lies the battle-field of the war waged by surgery against the appendix. The advocates of an early operation base their claims, *and justly*, too, upon four propositions:

1. It can not be foretold with any degree of certainty which case will go on to suppuration.

2. Delay increases the liability to suppuration, and consequently greatly endangers the success of a necessary operation.

3. Removal of the appendix precludes the possibility of a return of the disease, and this can not always be done after an abscess has formed; and,

4. Where the organ is not removed, one attack predisposes to subsequent ones.

Against this may be set the fact that the majority of cases recover without an operation; and, that a majority recover from a necessary operation. So that in one hundred cases the per cent. of deaths will not be large. In the one hundred cases operated upon, the deaths from unavoidable causes, plus the accidents of the operation, will about equal the mortality in the first series.

When called to a case of appendicitis, the first thing I do is to advise rest in bed and to explain to the patient and friends the reason for the necessity of avoiding the use of opiates. There is usually pain and they expect relief, but opiates should not be used, as the relief of pain will give a false sense of security and rob the physician of his best guide to the progress of the disease. For the relief of pain I rely upon the use of hot applications, with perhaps the addition of turpentine. In the majority of cases not complicated by abscess, the pain will cease after free action of the bowels by cathartics. There may be a catarrhal dysentery caused by the appendicitis, but this is improved by mild catharsis. I usually prescribe one fourth to one half grain of calomel every one or two hours until three or four grains are taken, followed in three hours after the last dose by one half ounce of castor-oil. I prefer the small repeated doses rather than one large one. The calomel has a dual effect—to quiet the nausea nearly always present, and to relieve the bowels. If vomiting and thirst are present, I use water, rather freely, that has been boiled and cooled by putting in a jar sur-

rounded by ice. Also small pellets of ice to swallow. A strong mustard plaster over the stomach will often be of service. In addition to this, I give three or four grains of quinine every three hours to eliminate the malarial element. I am quite positive that the latter is good practice. The diet should be restricted to animal broths and milk, or milk with seltzer. Fibrifuge mixtures, or drugs such as antipyrine, phenacetin, antifebrin, etc., should not be given, as they weaken the pulse, and by reducing the fever, when present, destroy a guide to the necessity for an operation.

This, in brief, will constitute the medicinal and dietary treatment of appendicitis. If by the second or at farthest by the third day, when the bowels have been freely moved, the pain and tenderness are unrelieved, the temperature above 101°, and the pulse above ninety, or the temperature normal and the pulse above one hundred, the sooner an appendectomy is made the better. *Especially is this true if vesical irritation and tenesmus are present.* Cases with sudden and violent onset, showing symptoms of great peritoneal irritation or rupture, should be immediately operated upon; also in recurrent attacks. It is unnecessary to say that every antiseptic precaution should be taken when an operation is made. Especial care should be taken, when an abscess exists, to protect the peritoneum from infection. When adhesions to the abdominal parietes exist, but the incision opens the general peritoneal cavity, careful exploration with the finger should be made to determine the point of election of the abscess. If this can be done, the opening should be carefully closed and thoroughly protected, and a second incision made over the abscess. If only limited adhesions exist, the general peritoneal cavity should be artificially walled off by packing around the opening with strips of iodoform gauze, six or eight inches long, always counting the number used. Search should then be carefully made for the abscess, which in the majority of cases will be found post-cecal. When this is opened and drained, digital examination of the cavity should be made to find the appendix. If it is found hanging free in the cavity it should be removed, but if adherent and forming a part of the abscess wall no effort should be made at removal at this time. The cavity should be gently but thoroughly irrigated with a

warm bichloride solution one to ten thousand, then sponged dry, and disinfected with full strength solution of hydrogen dioxide, packed with gauze for drainage, and dressings applied. This should be left *in situ* for forty-eight hours unless there is a rise of temperature. In this case the dressings and gauze should be removed and the wound irrigated with a warm salt solution. This should be repeated once, twice, or more times in the twenty-four hours, according to the fever, and continued as long as there is an elevation of temperature. After each irrigation a sufficient amount of gauze to keep the wound open should be introduced, and passed *down to the bottom of the cavity.* This is important, as it keeps the wound open, gives free drainage, and prevents burrowing. By this time adhesions will be so firm that there will be little danger of breaking through the abscess wall. If there is no fever, the dressings can be changed when necessary, but the irrigation will not be required.

The method of treating the stump of the amputated appendix is a subject still under discussion. Evidently they can not all be treated the same way, as very different conditions will be met with. Perhaps in the majority of cases, where no abscess exists, the method of making a cuff by a circular incision, peeling down the peritoneal coat, dilating the opening into the bowel, invaginating, stitching, and patching with peritoneum will give the best results; or simply ligitating and cutting off beyond the ligature and cauterizing the cut end with pure carbolic acid. The latter will answer where there is an abscess.

NOTE.—Since writing the above I have had five cases, one necessitating an operation, an abscess existing apparently a long time from recurrent attacks, with death resulting from sepsis commencing before the operation, and from an accidental rupture of the abscess into the peritoneal cavity. The other four recovered. One of these, a man twenty-five years old, gave a history of attacks recurring every three or four months for the past two years. He has consented to have the appendix removed in a few weeks. Another is that of a young lady of Greencastle, Ind., who was taken sick while visiting in this city. After recovery she returned home, and was persuaded by her friends to have an operation made. She was sent to the Wesley Hospital, Chicago, and I append the letter of Dr. Graham, who

had charge of the case, which shows his good judgment and skill:

CHICAGO, ILL., November 23, 1897.

E. L. LARKINS, M. D.

Dear Doctor: Miss Duncan, about whom you write, came into my service at the Wesley Hospital about two weeks ago. Although free from symptoms at the time, she gave the history of two attacks of appendicitis, from the last one of which she had recently recovered under the care of yourself and Dr. Young.

I considered the indications clear for removing the appendix, and did so. She is about well of the operation, and will soon leave for home. The appendix contained a small amount of fecal matter, but no concretion. The lumen of the cecal end was contracted and of the free end dilated. There were no surrounding pathological adhesions, but the dense and thickened walls, and the changes in the mucous membrane, pointed unmistakably to previous inflammation which had stopped short of perforation. Yours, etc.,

D. W. GRAHAM.

SECRETION NEUROSIS OF THE COLON.

(SYNONYMS: Colica mucosa, enteritis membranacea, colitis pseudo-membranacea, colitis pellicularis, colitis tubulosa, colitis fibrinosa, catarrhus desquamativus, membranous colitis, mucous colic.)

BY BYRON ROBINSON, B. S., M. D.,

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CHICAGO.

History notes that Dr. Mason Good gave one of the first communications in regard to the above disease, in 1825, under the name "diarrhea tubularis." Woodward collected the literature up to 1879, in the medical and surgical history of the War of the Rebellion, Vol. 1. Da Costa wrote in regard to the disease, as also Leyden, in 1892. But Nothnagel in 1884 wrote an excellent essay on the disease, naming it colica mucosa. In 1884 Krysinski, of Jena, wrote an inaugural thesis on the disease, detailing six cases, and sought to establish the cause of the disease in the presence and effect of micro-organisms. It appears that Leube thought it a nervous affection, as well as Vanni. Pick has recently written a short essay on the subject, as also has Marchand.

The reason that so many different names have been applied to this disease is on account of the various views as to its causation. If the disease consists of an epithelial inflammation, a catarrh, we can be satisfied with the designation, enteritis membranacea; but should there exist only increased mucous secretion, without inflammation, colica mucosa would signify. However, my studies on the subject have induced me to adopt the term, *secretion neurosis of the colon.* It appears from a general view of the subject that it is probable there are two ill-defined diseases in this field, *i. e.*, one is enteritis, and the other a simple increase of mucous secretion. Again, autopsies are so rare on subjects dying of secretion neurosis of the colon that no pathologic basis is yet definitely established. An ante-mortem diagnosis must be confirmed by a post-mortem before any pathology can be accepted or established.

All observers agree that secretion neurosis of the colon consists in the peculiar formation and evacuation of mucous stools. The clinical symptoms are colicky pains and the evacuation of masses of mucus. The mucous masses may consist of flat, even membranes, long bands, ribbons or shreds, rolled up tubes. Some portions assume a spiral form. Some writers assert that the masses are fibrinous, but I have examined quite a number and have never observed fibrin. The mucous masses are white, gray white, or they assume the color due to the mixing of mucus and feces—yellowish brown. By placing the mucous masses in water they unroll, partially dissolve. However, the peculiar form of the mucous masses may be retained in bottles of water for several days, as we have noted in one case. The quantities of mucous masses evacuated by some patients is enormous. In a female attended by Dr. Lucy Waite and myself, the patient would occasionally evacuate nearly half a pint of mucous membranes, masses, bands, tubes, or net-formed substances. In a male the evacuation showed more string or ribbon-like processes. All observers agree that women are the chief subjects of secretion neurosis of the colon. Litten estimates that 80 per cent. are women, and according to Kitagawa 90 per cent. are female subjects. Dr. Evans says that of the many samples sent to the Columbus Medical Laboratory, 80 per cent. are women.

I had a typical case in a man of thirty-six years of age, who

had the disease for nine or ten years. Some report cases in men and children. I never saw a typical case in a child. Almost all writers agree that the women who are subjects of secretion neurosis of the colon are neurotic, nervous, hysteric, or hypochondriac. So far as I have observed, the men possess a similar neurotic or hypochondriac tendency.

It is a characteristic of patients who are afflicted with secretion neurosis of the colon to have suffered from constipation (a neurosis of the fecal reservoir) for long periods previous to the outbreak of the disease. However, this accords with my view that constipation is a neurosis of the colon or fecal reservoir. The attacks of such patients are irregular, but endure for years. Pain may suddenly arise in the the abdomen of a colicky nature and continue until masses of mucus and occasionally feces are expelled. The attacks of pain may be extremely severe, especially when large masses of mucus are evacuated. So far as I could discover, the pain is chiefly located in the transverse colon, the descending colon, and the sigmoid flexure, in general over the left abdominal region. However, when the colicky pain is severe and continuous, the patient may complain of pain in the whole abdominal region. Some of my patients complained of pain running down the legs. Abnormal sensation may arise in the genito-urinary organs. After the evacuations of the mucous, slimy masses, especially the large masses, the patients appear and report themselves entirely free from pain. Generally the larger the masses evacuated, the longer the patient remains free; however, the colicky pains may be coming on for one or two days before the large masses are expelled. If the evacuation be slight in quantity, the colicky pains are slight but often continuous. The appetite of the patients is generally good, except at the times of attack. An enema will occasionally bring away very large masses of slime, but sometimes one sees patients who pass the mucous masses who do not report nor appear to suffer pain. Hence two series of patients arise in the field of mucous passages, viz: one series passes mucous masses preceded by colicky pains; the other passes them without colicky pains. Nothnagel, my honored teacher, the ablest of all writers on this subject, shields himself by adopting the term "colica mucosa et enteritis membranacea" for what we are designating secretion

neurosis of the colon. He acknowledges that a variety of pathologic processes are here included. Krysinski and Mathieu are both inclined to consider the subject as enteritis, and Krysinski endeavors to announce that certain low organisms are the bottom cause. It does not seem probable that micro-organisms would persist for years, and besides, were it caused by micro-organisms, we ought to be able to cure it more effectually. Krysinski describes cases which simply have a desire for stool without colicky pains, *i. e.*, merely "bearing down pains."

Much interest is always manifested by writers in the subject of the dejecta in secretion neurosis of the colon:

First, (*a*) Macroscopically the evacuation consists of membranous or tube-formed gray masses. They may resemble membrane from the respiratory passages in diphtheria. The mucous masses may be transparent like slime or non-transparent like fibrin, a grayish white or a dirty color with pigment in it. Sometimes the masses consist of large, wide and thick leathery-like membranes; at other times long ribbon-like bands or rope-like coils. The mucous masses are nearly always alone, unmixed with feces; and sometimes they resemble the swollen jackets of baked potatoes. By careful manipulation in water the masses of slime will generally unfold into membranes; hence the term, membranous colitis. They may resemble fasciæ or tendons, and one may be deceived by milk coagula.

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(*b*) Microscopically the mass substance represents a hyaline body, which can be preserved only a short time in air, alcohol, or water. Degenerating cylindrical epithelia of almost any grade can be noted. The slimy mass represents a glassy, unformed, transparent substance, and if acetic acid be added it assumes a wavy, striped, or ground glass appearance. The glandular epithelia are almost always found to be shrunken, swollen, or vacuolated. Sometimes vast numbers of microbes are present, cholesterin crystals, triple phosphates, fecal masses, pigment, and occasionally round cells.

(*c*) The chemical examinations reveal mucin or mucin-like material as the chief constituent. This may be considered as definitely established, as it is confirmed by Clark, Thompson, Perroud, Da Costa, Hare, Pick, Nothnagel, Furbinger, Hirsch, Walter, V. Jaksch, Krysinski, Kitagawa, Rothman, Litten,

Vanni, Leube, and Pariser, a sufficient number of investigators in whom to confide. Some authors assert that mucin is the chief constituent, with other albuminous bodies. The only author we found in literature who claimed that fibrin existed in the evacuations of secretion neurosis of the colon was P. Guttman, who apparently based his support on doubtful macroscopical examination.

(*d*) The pathologic findings are rare on account of the scarcity of material on which to establish them. Nothnagel reports a case of secretion neurosis of O. Rothman, which was examined by C. Ruge. Ruge reported that "in spite of careful examination of the whole intestinal tract, nothing abnormal was discovered." The above patient of Rothman presented a typical picture of colica mucosa, but died from a duodenal perforation. O. Rothman had another case who died of carcinoma at the base of the skull. The patient was in the hospital from June 14th to November 2, 1892. By giving an enema the patient evacuated large masses of mucus without pain. He had no complaints to make from the secretion neurosis of the colon. The autopsy showed in the transverse colon (where it did not contain feces) and the strongly contracted parts of the descending colon injected and folded mucosa. Between the folded mucosa were products, partly membranous, partly strand-formed. The parts of the colon filled with membrane contained no feces, but in the colon ascendens there were no mucous masses, but feces with reddened mucosa.

In the sigmoid the membranes could be torn from the reddened mucosa without loss of substance. Feces were found in the small intestine which had reddened mucosa. The chief mucous masses were found in the left half of the transverse colon, descending colon, and sigmoid. The microscope demonstrated the mucous masses in the lower colon to be mucin, not fibrin. In this second case there can be no doubt of the existence of catarrh. Just on this point of catarrh and no catarrh investigators are divided. On the question of mucin or fibrin being evacuated, almost all authors agree it is not fibrin.

We then have three opinions in regard to the nature of secretion neurosis of the colon, viz:

(*a*) That it is an enteritis (catarrh).

(*b*) That it is simply excessive secretion of mucus (mucous colic).

(*c*) That it is a secretion neurosis (nervous).

In general visceral neurosis we have, (1) motor neurosis (motus peristalticus); (2) sensory neurosis (hyperesthesia and anesthesia); and (3) secretory neurosis (excessive, deficient, and disproportionate secretion).

In secretion neurosis of the colon we have to deal with a patient who has the three secretory disturbances, *i. e.*, deficient, disproportionate, or excessive secretion. Patients of this kind are generally first long sufferers from constipation (deficient secretion). Then follows disproportionate secretion, but that is not so evident, as it simply produces fermentation. Finally comes the scene of habit in these neurotics of excessive secretions of mucus. Now, this excessive secretion of mucus arises from the unfortunate habit which the mucous cell has formed during the early but prolonged stage of constipation. The mucous cell had learned a persistent nervous or irritable habit of excessive secretion. After a long-continued life of bad habits of secreting excessive mucus, the cells were unable to change their life and assume a normal action. Hence, as one of the etiologic factors of secretion neurosis of the colon, we will assume to be depraved cell habit from reflex irritation.

A second factor, which perhaps plays a chief role, is genital disease. It is very plain that secretive neurosis of the colon is nearly always found in neurotic persons of the female sex; also that such subjects nearly always have pelvic disease. Every gynecologist knows from actual experience that pelvic disease produces constipation, a forerunner of secretion neurosis; constipation is secondary to genital disease. Genital disease through reflex action produces in the bowel deficient secretion, excessive secretion, or disproportionate secretion. Disproportionate secretion induces fermentation, causing gases which distend the bowel, resulting in atony and deranged nerve action in the epithelial cell. Irritations from the diseased genitals induces the development of toxins. The toxins affect the tissues locally, inducing, if not epithelial catarrh, colitis. Besides the absorption of the toxins induces neurasthenic conditions and symptoms. The diseased genitals reflexly lead to a train of conditions which induce

defective nutrition and excretion. The evacuation of glassy, viscid mucus, subsequently followed by grayish shreds, preceded by pain, is pathognomonic of secretion neurosis of the colon. Gynecologists frequently observe these conditions, only short of the grayish shreds and muco-membranous layers. However, the pain on defecation may be but slight.

The first step in the cure of such patients is to remove the afflicted genital organs, when subsequent improvement often supervenes. In one of my patients suffering from chronic pelvic disease and also typical secretion neurosis of the colon, many complex neurotic symptoms of an intense character would occasionally arise at the time of evacuations. She presented paroxysms of pain, intense colic, profound hysterical or neurotic symptoms, rapid pulse, disturbed respiration; all of which subsided very slowly after the attacks and evacuations. Reflex neuroses of an intense character were present. In the intervals she was quiet, presented none of the acute egoism of the hysteric, and apparently no desire for attention or notoriety. She had distinctly disease of the genitals.

The differentiation of the nature of the pathologic process in secretion neurosis of the colon may be aided by (*a*) the anatomic or pathologic findings in autopsy; (*b*) by analysis of the clinical cases; (*c*) by examination of the evacuations, and (*d*) by the comparison of analogous processes in other mucosæ. We have spoken of the findings in the autopsy and evacuations. But too much can not be said in regard to the correct clinical symptoms. The numerous names applied to the disease shows that its clinical symptoms are not definitely agreed on. Physicians are divided as to the existence of catarrh (enteritis) or a non-catarrhal process. Some argue that not only the frequent evacuations but also the pain accompanying and preceding the evacuations point to an inflammatory process, a catarrh, an enteritis. Here the two conflicting opinions are irreconcilable, and hence we must admit that there are two diseases included, viz: colica mucosa and enteritis.

A third view of the disease is the one assumed by the author, and that is, the disease is a secretion neurosis of the colon. Leube suggested this view recently, and Vanni called it by the ponderous title mio-angio-nevrosi intestinale con spersecrezione

mucosa. Colica flatulenta is a close relative of secretion neurosis, as is also the motor neurosis (motus peristalticus) of the digestive tract. They consist of an invisible derangement of the sympathetic nerve. Secretion neurosis occurs in subjects who can in almost all cases be demonstrated as neurotics.

A comparison with similar processes in analogous structures (mucosæ) perchance may not clear up the pathology very much. In bronchitis crouposa chronica, a similar disease in a similar structure (mucosa) to secretion neurosis of the colon, there is found no anatomical change in the bronchial mucosa as noted by B. Litten, and there is no fibrin present. Klein, Neelson, and Beschorner claim that the membrane and coagula in bronchial croup is thickened mucous or slime. The keen and able observer, Nothnagel, vigorously claims that as a comparison the membranes of chronic croup speak against the fibrinous product and inflammatory nature of colica mucosa (secretion neurosis of the colon). Wernich has suggested comparisons of the disease with other mucosæ. However, conflicting opinions still exist in regard to the nature of the membranes in bronchial croup.

Do we receive any light in secretion neurosis of the colon by comparing it with membranous dysmenorrhea which was first described by Morgagni in 1723 and colpitis membranacea by Farre in 1858? The number of terms applied to membranous dysmenorrhea, as endometritis exfoliativa, endometritis dissecans, and decidua menstrualis, signifies conflicting opinions. There are at least two irreconcilable opinions in regard to membranous dysmenorrhea, viz: the inflammatory and the non-inflammatory, but it appears to the writer that a third view of the membranous dysmenorrhea should be introduced, viz: that it is a *secretion neurosis of the endometrium.*

However, it appears quite certain that there are two conditions classed as membranous dysmenorrhea, viz: In one case the membrane consists of fibrine, lymphoid cells, and red blood corpuscles—a secretion neurosis—and secondly, the membrane consists of a cellular infiltrated endometrium—an inflammatory process. The second process throws off the endometrium with its blood-vessels, cell infiltration, and utricular glands. Hence, under the general term membranous dysmenorrhea we are dealing with inflammatory processes (endometritis) and

a secretion neurosis (a fibro-lymphoid membrane enclosing accidentally red blood corpuscles from diapedesis at the monthly congestion). The last process is a perverted nerve action—a secretion neurosis of the endometrium.

In an intensely lymphatic organ like the uterus we would expect more lymphoid elements in the membrane than in the colon. This would account for the fibrin and lymph cells. Also red blood corpuscles are found in the evacuations of secretion neurosis of the colon, and they are simply more numerous in the membrane of membranous dysmenorrhea, because the intense endometric congestion proceeds to rupture (diapedesis). Again, secretion neurosis of the endometrium, like secretion neurosis of the colon, evacuates the mucous membranes with or without pain and at irregular intervals, showing a sustained comparison.

To say that the above disease of the colon and uterus are a form of malnutrition or deranged innervation means but little, and to be short, the so-called colica mucosa is secretion neurosis of the colon, and membranous dysmenorrhea is a secretion neurosis of the endometrium.

In secretion neurosis of the colon an explanation of the string and net-formed condition of the evacuated stool may be made from the contracted condition of the irritable muscularis of the colon, which is thrown into folds, recesses, and grooves, which allow the moulded form of the retained secreted mucus to persist. It may be mentioned that some confusion in diagnosis may arise by the so-called colica mucosa and enteritis co-existing. In other words, a catarrh and secretion neurosis of the colon may exist together.

The prognosis of secretion neurosis of the colon is for life favorable, but for recovery doubtful. I have known the disease to continue for nine or ten years with but slight changes. However, it is very variable in its attacks and very erratic in its occurrence.

The treatment of secretion neurosis of the colon must be directed to the nervous system, as habit, diet, physical and mental exercise, and to general moral influence.

Regular daily bowel movements should be secured by very slight use of cathartics, liberal use of drinking fluids, diet that leaves a large residue. Baths (medicated) twice weekly are very

helpful. I have made some happy and helpful to themselves by urging them on to their regular business, which had been prohibited by other physicians. Clysters, high rectal and colonic irrigations aid wonderfully in evacuating the mucus. Intestinal antiseptics (Hg_2 Cl_2), slight massage, and long rests at night are beneficial. Much moral influence and helpful courage is given a patient when he is told he will not die from the trouble, for concentrated thought on the patient's disease makes him much worse—particularly because he is almost always a neurotic. Electricity aids physically and mentally. Sexual activity should be especially limited. Clothing should be carefully regulated to avoid sudden changes.

CONCLUSIONS.

1. The above disease of the colon should be termed secretion neurosis and enteritis. The first is of neurotic origin and course.

2. Both secretion neurosis and enteritis may co-exist.

3. Secretion neurosis of the colon occurs chiefly in neurotic females (80 per cent.).

4. It is closely associated with genital disease.

5. It is frequently preceded by constipation (a neurosis of the fecal reservoir or of the inferior mesenteric ganglion).

6. The continuation of the disease is partly due to an irritable, vicious habit of excessive epithelial activity.

7. The disease is characterized by colicky pains, with the evacuation of mucous masses.

8. It is not fatal, variable and erratic in attacks, with impossible prognosis as to time.

9. Macroscopically the evacuations appear as membranous, yellowish white masses of mucus.

10. Microscopically one sees hyalin bodies, cylindrical epithelium, cholesterin crystals, triple phosphates, round cells, various kinds of micro-organisms and pigment.

11. Chemically the evacuations consist of mucin and albuminous substance.

12. Secretion neurosis of the colon is comparable to the secretion neurosis of the endometrium (membranous dysmenorrhea) or bronchial croup.

13. Secretion neurosis of the colon appears to be limited chiefly to the part of the colon supplied by the inferior mesenteric ganglion, *i. e.*, to the fecal reservoir (the left half of the transverse colon, the descending colon, the sigmoid and rectum).

14. It is a disease of the sympathetic secretory nerves, and is analogous to disease of the motor and sensory nerves of the viscera.

15. Its treatment consists in removing the neurosis, which lies in the front ground, and regulating the secretion, which lies in the background.

16. Three views exist as to the above disease, which certainly embrace more than one pathologic process, viz:

(*a*) That the disease is enteritis (catarrh).

(*b*) That it is simply excessive secretion of mucus (colica mucosa).

(*c*) That it is a secretion neurosis of the colon (nervous).

Abstracts and Selections.

DISPOSAL OF THE STUMP IN APPENDICITIS OPERATIONS.*

BY WM. D. HAGGARD, JR., M. D.,

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In the early deliberate operations for the removal of the appendix, surgeons were content to ligate it as they would an artery. The protruding mucous membrane of the stump was cauterized with carbolic acid, the Paquelin cautery, or a bichlorid tablet. Unlike the ligation of an artery, instead of the sterile fluids that organize behind the constriction, the fluids or contents of the appendix are constantly saturated with numerous species of virulent micro-organisms that find an admirable pabulum in the compressed area under the ligature. This method was supposed to have its analogy in the ligation of the pedicle of an ovarian tumor, but we now know that it is wholly different from tying an aseptic stump for hemostasis. It likewise finds no analogy in the ligation, for ablation of the appendages which have no connection with intestines can not be inverted, and are usually sterile, or capable of being made so. Moreover, Morris has compared ligation of the appendix to ligation of the end of the colon after lateral anastomosis. They are structurally similar, and what would be unsafe in one would be unsound in the other. Approximation of the serous coats in both is the logical procedure. Subsequent perforation after simple ligation occurred sufficiently often to cause the abandonment of that method. The custom of inverting the stump into the *caput coli* superseded the original crude device of dropping the pedicle. This has also many variations, and is the accepted way of disposing of the stump. It was characterized by Price, early in the history of its adoption, as "the good way." It is practiced in varying completeness, from simple invagination into the cecum to the elaborate technique of Van Hook, which con-

*Abstract of a paper presented to the Southern Surgical and Gynecological Association at its Tenth Annual Meeting, held in St. Louis, November 12-14, 1897.

sists in amputating the appendix between a temporary ligature around base of appendix and artery forceps, distally. The stump is cauterized with carbolic acid, a row of Lembert sutures is passed from side to side, the temporary ligature of appendix being removed before the sutures which invaginate the appendix are tied.

Dawbarn introduced the neat and efficient purse-string suture. It encircles the base of the appendix within a radius of a quarter of an inch, passing through the serous and muscular coat of the cecum. The appendix is cut away about half an inch from its junction, stretched with small forceps, which push it into the intestine, and are withdrawn as the suture is tightened around the vanishing stump. The acme of refinement in appendix surgery was reached when the method of section through the peritoneal coat, excision of mucous membrane, and suture of opposing serous and muscular coats came into vogue. This method may or may not be combined with invagination. Personal modifications of this plan have given the brilliant results of Murphy and Morris, and, in the hands of the expert, leave nothing to be desired.

The cautery method minimizes the danger of infection from the stump, and is the one which McBurney commonly employs. The appendix, after its detachment from its mesentery, is amputated a quarter of an inch from its base. The edge is held up with forceps, a probe passed through the opening in the stump of the colon to test its permeability, and a fine Paquelin cautery point inserted into the lumen of the stump. The ligature is then applied around this cauterized area, the ragged edge trimmed and freshly cauterized.

The proverbial untrustworthiness of a thermo-cautery has ever been the *béte noir* of the practical surgeon, and any method which includes its employment is not congenial.

Some of the failures from inversion of the stump, which caused consecutive perforation, fecal fistula, and sometimes death, in operations of otherwise favorable import, were due to a stricture dam between the ligature and proximal opening of the appendix. This condition manifestly duplicates the essential condition for a continuance of all the possibilities for evil of the original attack. The operation was imperfect—a mere resection of the disease, leaving the actual and active casual factor uncanceled. These facts have led McBurney to test the patency of the lumen of the

stump with a fine probe after amputation and before ligature and closure, and when leaving a stump this should invariably be done.

The ideal of all surgery is completeness, and applied to the surgery of the appendix would suggest total excision of the entire organ. This ideal method has been approached by McBurney in his recommendation to "cut away the appendix very close to the colon, and the orifice be depressed with a probe and the edges of the furrow thus made sutured with a double row of fine catgut or silk."

In spontaneous amputation of the appendix by necrosis near its base, I have seen this method practiced in the case of a colleague with success. The efficiency of peritoneal suture of gunshot or stab wounds of the intestine have no doubt suggested to many surgeons a similar closure of the orifice in the cecum left after complete excision of the appendix. It has remained for Deaver to practice this method as a routine in suitable cases, and its more general adoption, I believe, will complete the last step in the evolution of the treatment of the stump.

The technique, as employed by Deaver, is as follows: After freeing the appendix from adhesions and meso-appendix, the cecum is stripped of its contents and grasped between the fingers and thumb of the left hand; the appendix, being held up with forceps by an assistant, is cut off flush with the colon. The rent at the site of its former junction, while the cecum is still held securely with the left hand, is united by continuous Lembert sutures. They may be disposed in two layers, the first uniting the edges of the wound, the second approximating the peritoneal covering of the cecum over it.

This method, aside from its completeness, is particularly useful when the appendix is densely adherent throughout its length. A temporary ligature to the distal side allows of division at its base, and disposal of the proximal end at once. Subsequent detachment of the organ itself from base to apex can be accomplished with great facility. This method is not applicable to all cases. When the cecum is tied down with adhesions it is impossible to bring it into the incision, which is the essential requisite in preventing the escape of any of its contents and necessary to the careful suturing of the cut end. Where the appendix has its origin behind the cecum the carrying out of this

technique would expose the patient to the danger of infection. Total excision of the appendix and closure of the hole in the head of the colon does away with the following dangers:

1. Subsequent perforation of the stump under the ligature from infection in its own cavity.

2. Abscess of the wall of the cecum from invagination of an infected stump.

3. Continuance of the infectious process from a stricture dam in the stump between distal ligature and proximal opening of the appendix into the cecum.

4. Imperfect invagination with incomplete drainage of the stump, on account of cecal wall being thickened and stiffened with inflammatory exudate.

5. Infection in base of appendix, not apparent macroscopically.

The writer has employed this method in five cases in the last few months with entire satisfaction.

MORTALITY AND TREATMENT OF ACUTE INTUSSUSCEPTION.*

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The writer calls attention to several features of recent literature on this subject, viz: That intussusception, while presenting conditions allowing of easy and certain diagnosis much oftener than observed in other forms of intestinal obstruction, was attended with no lesser mortality; that intussusception, unlike other forms of obstruction, could be relieved by mechanical non-operative measures, yet it remained one of the most fatal; and the variance of statistics by different authors: Rydygier giving, in 1895, a mortality in acute cases of seventy-five per cent., and Wiggins, in 1896, of twenty-two per cent.

The largest number of cases included in any report in 1895 included a total of one hundred and fifty cases treated by abdominal section, comprised in this list being chronic cases, those due to new growths, and the purely acute forms.

*Medical Record.

Dr. Gibson, in his article, tabulates two hundred and thirty-nine cases—eighty-nine occurring prior to 1888, and one hundred and fifty cases to January 1, 1897.

As regards diagnosis, little new was evolved from the researches of the writer. The presence of a bloody discharge from the rectum is the most constant symptom, and when present in a child, accompanied by the sudden onset of abdominal symptoms, must be considered pathognomonic. Fecal vomiting is infrequent, which is important, as some practitioners obstinately refuse to entertain a diagnosis of intestinal obstruction unless this symptom is present.

The finding of a tumor by abdominal palpation was omitted from the tables given, lest misleading deductions be drawn from them, the value of such observations depending largely on knowledge of the observer's individual characteristics. In general, however, palpation of the abdomen yields definite signs of greater value and more frequently than in other forms of acute intestinal obstruction. The other symptoms most frequently found were a tumor felt in the rectum, and the presence of mucus and tenesmus.

The cases occurred more frequently in male children, and the writer suggests as a cause of this a tight phimosis, causing straining. The mortality of the cases collected is fifty-three per cent. The first and second days show a mortality rate less than the general mortality, the four succeeding days a steadily increasing mortality in each case greater than the total, and the end of the week shows a beginning decrease of the mortality.

The mortality, according as the condition was found to be reducible or otherwise, was in direct proportion to the duration of the symptoms.

Ileo-colic variety heads the list as being the most fatal, with a mortality of seventy-two per cent., the colon being the lowest, fifty per cent.

The mortality as regards age is considered of importance, showing, under one year, sixty-five per cent.; under fifteen years, sixty-one per cent., and adults, sixty-two per cent., which, in the writer's belief, goes to show that the mortality depends not so much on the age of the patient but on the condition.

The mortality according to sex shows, male, fifty-seven per cent., and female, seventy-three per cent.

Contrasting the mortality of intussusception with acute intestinal obstruction in general, from a tabulation of some six hundred cases, cases which necessarily give rise to a large number of complicated and extensive operations, it develops a mortality of only forty-one per cent., while intussusception shows a mortality of fifty-three per cent.

This comparison suggests the following points to the author: A needed improvement in dealing with intussusception; the necessity of early operative interference, while reduction is possible, not wasting time in attempts at reduction by inflation per rectum, unless with the determination to at once resort to abdominal section if the inflation is unsuccessful.

Treatment by mechanical distension, air or fluids, should be very limited in its application. Enemata of fluids or air delays operative measures, are uncertain in their effect, delusive in their results, are distinctly dangerous, the intussusception is likely to recur after reduction, this not occurring after abdominal section when "anchoring" the reduced bowel has been practiced. The pressure which can be used with safety is limited, the author believing that a hydrostatic pressure above four feet is dangerous—but accurate track of the distension can be kept by the sense of touch.

Should an operation be made, the incision should be in the median line, generous, and extended without hesitation. Examine the intestine either way from the ileo-cecal valve, and if the cecum is collapsed the search must be toward the small intestine.

The intussusception located, it must be directly examined in its whole extent. Attempts at reduction are best made in the direction of working away the sheath from the invagination rather than pulling the latter out. If there is a little doubt as to the integrity of the bowel, one may employ Hahn's method of surrounding that portion by a gauze packing, over which the sutures in the abdominal wall may be provisionally tied.

Having determined that there is a purely irreducible condition present, the following methods of treatment may be considered: (1) Artificial anus; (2) entero-anastomosis; (3) partial resection; (4) typical resection.

In gangrenous intussusception, the patient must be relieved of the obstruction and of the infection attending gangrene. So

grave is this condition that we should not fail to use any principle of treatment which holds out any hopes of aid, and it is suggested that the antistreptococcus serum be tried as an adjuvant to operative measures, of which two are recommended: (1) Resection with immediate union of divided intestine; or (2) resection with utilization of divided ends for a temporary artificial anus.

OPERATIVE TREATMENT OF HIGH CANCER OF THE RECTUM.*

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Early and wide and thorough extirpation, well beyond the disease through healthy tissues, together with the contiguous lymphatic glands, and before metastasis has taken place, is essential to success, and if thorough removal can be effected, the future immunity of the patient will be as great as after removal of a cancerous breast or other organ.

The sacral glands are first involved and later the iliac, along the course of the iliac vessels; when these latter have become involved complete extirpation of the disease is of course impossible, and palliative treatment is only to be considered.

Visible and palpable lymphatic glands discovered during the performance of a preliminary inguinal colotomy in the meso-sigmoid are not necessarily cancerous, and are often observed when there is no primary cancerous lesion. The first difficulty in the way of success in the treatment of cancer of the rectum is the fact that it is practically never diagnosed early, rarely early enough for satisfactory operative treatment.

In a large proportion of cases of high cancer of the rectum there is a remarkable abscence of localizing symtoms until the disease is far advanced, or until obstructive symptoms have occurred. Loss of flesh and strength, with irregularity of the bowels—alternating diarrhea with constipation and flatulence—are usually the only symptoms for a long period in the early history of the disease, and these are usually misinterpreted.

*British Medical Journal.

Next, symptoms of auto-intoxication occur, and further complicate the diagnosis; and it is only when ulceration of the mass has caused hemorrhage or sanious and mucous discharge from the anus, or when symptoms of obstruction have occurred, that a diagnosis is made. Even in advanced cases no tumor can be felt from the abdomen, except, of course, those of secondary formation. Exploration of the rectum alone will discover the growth, and if early and thorough examination of the rectum had been made as a routine procedure in those doubtful cases with the above mentioned symptoms, many cases would be discovered in time to enable the surgeon to effect a cure, or at least respite, by operation.

Operation. Operable cases are (1) those in which the disease is limited to the gut itself, and the whole mass of diseased tissue can be removed with a fair prospect of permanent cure, and (2) those less promising cases in which, while it is still possible to remove the whole mass, extension by infiltration and invasion of the sacral glands have made it doubtful whether an early recurrence after operation is not probable. There is a great increase in body weight, strength, and vigor in patients from whom a cancerous mass has been removed, even in the somewhat doubtful cases. Inguinal colotomy should be substituted for the radical operation when there is extension of the disease by metastasis, to divert the stream of feces from the ulcerated area of the bowel.

The middle and upper portions of the rectum are accessible from (1) the abdomen, (2) the sacral region, and (3) through the vagina in the female.

The operations through the abdomen and the vagina are of very limited application. Access to the upper portion is more readily obtained by removal of the left lower quadrant of the sacrum and the coccyx (Kraske); or by one of several osteoplastic modifications of Kraske's incision which permit of closure of the wound and restoration on the bony as well as the fleshy framework of the pullet of the pelvis (Heinecke, Rehn, Rydygier, and others); or by exposure along the left border of the sacrum (Zuckerkandl).

The sacral route is, therefore, in the present state of our knowledge, the one which is most universally applicable, and the one which, with some comparatively rare exceptions, is

always selected. The line of the third sacral foramen is uniformly accepted as the upper limit of the incision, and the rectum should always be exposed by one of the osteoplastic methods in order that the continuity of the bowel may be re-established after the removal of the disease, and the osteoplastic flap or flaps replaced. Should it be found necessary to attack the proximal end of the bowel in the upper angle of the wound, as is often the case, the left lower portion of the sacrum can be removed, and the operation completed as in Kraske's method.

Preliminary Colotomy. The following reasons are given for always advising this procedure: (*a*) Rectal examination gives no information as to the upper limit of the growth, nor of the presence or absence of the glandular involvement, information which can only be obtained from examination within the abdomen, and without which the operation should not be undertaken. (*b*) As the peritoneum is generally freely opened during the operation, free evacuation and thorough cleansing of the bowel are of the utmost importance as a preliminary measure. In most cases free evacuation is quite impossible, except through a colotomy wound, and if the operation be undertaken without it a constant discharge of fecal matter will effectually nullify any attempt at cleansing the lower bowel, while much fecal matter will be retained above the mass to foul the wound during the operation. It is also a most important matter to be able to divert the stream of feces from the wound for the first few days after operation. (*c*) Should a permanent opening be necessary, the inguinal is much more cleanly and manageable than a sacral one. The feces should be directed entirely through the inguinal wound, and the rectal portion of the bowel closed off.

Resection or Amputation. Resection with restoration of the continuity of the bowel should always be aimed at. Heretofore sloughing of the bowel, incomplete union with fecal extravasation causing cellulitis and ending in fistulæ, etc., have attended many of the attempts at resection. The essentials to success are (*a*) a clean field of operation (hence the necessity for a preliminary colotomy and thorough cleaning of the lower bowel); (*b*) free descent of the proximal end of the bowel without tension; and (*c*) careful suturing. There exists a quite unnecessary dread of

bringing down the upper segment of the bowel for fear of depriving it of its blood supply and causing it to slough. The bowel must be brought down without any violent pulling or stretching, and in order to do this the attachment of the meso-rectum and meso-colon must be snipped away, and if this is carefully done at a point well away from the wall of the bowel, the vascular supply need not be interfered with.

Suture Method. After suturing the cut extremities of the bowel through all their tissues, it is best to invaginate the proximal into the distal end and apply a row of sutures, through the serous and muscular coats only, at the line of invagination. Then introduce a rubber drainage tube, about half an inch in diameter, covered with iodiform gauze, through the anus, past the line of suture, and leave it there for some days. Its object is to support the line of sutures, and apply to it a dressing of iodiform gauze, and to carry off mucous and perhaps fecal discharges which may find their way down past the colotomy wound.

Opening of the Peritoneum. This is unavoidable in high operations upon the rectum, and in a clean wound is not to be feared. When possible the wound in the peritoneum should be closed by suture, but this is not always easy, and packing with iodiform gauze for a few days will answer every purpose.

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—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

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INTESTINAL IRRIGATION.

The importance of intestinal irrigation in the treatment of infantile diarrheas is brought to the attention of the profession by Dr. William J. Robinson (*New York Medical Journal* for Oct. 23d,) in an article entitled "A Plea for the More General Employment of Intestinal Irrigation and Rectal Alimentation in the Grave Diarrheas of Children."

The author reports one case as an example of the results to be obtained from irrigation; a child eight months old, fed upon a mixture of condensed milk and a proprietary food, with a diarrhea existing for several days—for which nothing had been done. Fever and restlessness, more frequent and offensive discharges, and obstinate vomiting so alarmed the parents that a physician was sent for. There was no improvement in the child after taking bismuth salicylate and opium, with liquid peptonoids, followed by antipyrine, bismuth subgallate, bismuth naphthol, tannic acid, Dover's powder, and tannalbin.

Despite treatment the symptoms grew steadily worse, save less frequent movements, and the child was given up by the physician in charge.

At this juncture the child was seen by Dr. Robinson; it had a temperature of 106.6° F., almost imperceptible pulse, with marked prostration.

At once the baby's large intestine was irrigated by means of a soft tube and starch water, two gallons of the latter being used. The amount of black and offensive feces which were removed

was astonishing. A hot mustard bath was at once given, with gradual cooling and a corresponding fall in the temperature to 102.5° F. Considerable stress is laid on the after-treatment, which consisted of rectal alimentation. This the author states is a neglected but very valuable part of the treatment in these cases where the stomach is intolerant. The following is administered after the irrigation: One egg, one tablespoonful of cream, half teaspoonful of brandy, teaspoonful of beef juice, and a teaspoonful of a mixture containing potassii bromidi, gr. iij; chloral hydrat. gr. j; antipyrine, gr. j; aquæ menth. pip. ʒj. After administering this nutrient enema the buttocks are held pressed closely together for five minutes. The improvement in the child was rapid and permanent; the temperature reached normal on the fourth day and so remained.

This case is only a sample of the ones which are seen constantly by those who use this valuable means of treatment. The author, we think, did not lay sufficient stress upon the details of the irrigation treatment. Too many content themselves with a mere irrigation of the rectum, the fluid used never reaching the sigmoid or beyond. The kind and size of tube to be used, the height of the fountain syringe, the solution used and its temperature, the position of the patient, and the technique of introducing the tube are important details, and upon their proper observance rests its success or failure.

Mention might have been made of the use of the rectum and colon for the purpose of a direct action on the kidneys—when a flushing of those organs is desired in acute or sub-acute nephritis—if large, high enemata are given.

Rectal alimentation is often of great assistance, but we think that it would be ill-advised to use so large an enema as suggested above, or one which was not at least partially pre-digested. The rectum is an absorbing organ but not a digestive one, and the same holds good of the colon, and it is not likely that the cream or the beef juice do more than act as a vehicle for the other ingredients of the enema.

If intelligently used, intestinal irrigation is a most valuable aid, and should be more generally employed; not only in the grave diarrheas as suggested by Dr. Robinson, but used early in order to prevent these serious conditions.

With Our Exchanges.

DISEASES OF THE RECTUM.

Blake, John B., Boston: Palliative and Operative Treatment of Fistula in Ano. (*Boston Medical and Surgical Journal*, September 2, 1897.)

Dr. Blake states that next to hemorrhoids, fistula in ano is the commonest disease of the rectum. In a series of cases reported there is one case in a child of one year, the oldest operated on being seventy-five years old.

An inflammatory process is given as the most frequent cause, a proctitis, peri-proctitis, or an ischio-rectal abscess. Other causes are fissure and ulcerated hemorrhoids, tubercular processes of rectum or ischio-rectal fossa, trauma, foreign bodies, necrosis of sacrum or coccyx, worms, and predisposing causes frequently, as constipation and diarrhea and filth.

He names complete blind internal and blind external as varieties, also the horseshoe.

The diagnosis of a fistula is easily made, but its extent can not be ascertained until time of operation, and for this reason a prognosis can not be given before that time.

A very comprehensive resumé of the anatomy of the parts is given, when the author takes up the treatment, which as expressed in the title he divides into operative and non-operative.

The non-operative treatment is given as (1) simple cleanliness, (2) dilatation of opening and packing with gauze, (3) application of caustics, (4) introduction of elastic ligature. Of these the preference is given the latter (but in our minds should be included in list of operative measures.—Ed.).

The operative treatment is named as follows: (1) Free incision with granulation from the depth of the wound to the surface; (2) removal of the fistulous tract by dissection and uniting the wound by sutures to secure healing by first intention.

Preliminary preparation for the operation is an essential; administration of cathartics, preferably saline, the day preceding

the operation, followed by an enema not more than two hours before the administration of the anesthetic. Previous diet for a day or so should consist of meat broths only. Either dorsal lithotomy position or on the side on which the main opening of the fistula is situated may be used. Mechanical cleanliness, shaving, and antiseptic methods must prevail.

Full dilatation of the sphincter is an important step in the operation, but more so is the careful probing to ascertain the presence of branches or blind pockets. Great care must be exercised in finding the internal opening, not forcing the probe through. Granulations and pockets must be thoroughly curetted. The external sphincter may be freely incised without hesitation, but the internal should be incised most carefully; leave part of its fibers intact, if possible. Never cut anteriorly in a woman, always at right angles, and never in but one place.

Hemorrhage is controlled by packing, a T-bandage applied, after inserting a suppository containing one-fourth grain of morphia, in all cases. Dressing changed two days after operation and daily thereafter, the bowels moving on the fourth or fifth day, assisted by a warm sweet oil enema to soften the feces, followed by a soapsuds enema. The granulating process may last from three weeks to three months.

The type of fistulæ in which the operation by means of excision is applicable are the non-inflammatory, of moderate extent, with few branches, also blind internal fistulæ of all varieties.

The fibrous walls must be removed by dissection or curette, the walls being approximated by deep sutures, silk preferably. They should be inserted at half-inch intervals. Pain is apt to be greater after excision.

Dr. Blake states that the necessity for such a discussion as waxes now in journals in regard to operating for fistula in tubercular subjects is not apparent. If in the judgment of the surgeon the condition of the patient is good enough to withstand operation, and if the benefit is greater than the discomfort attendant upon the operation, then it must be operated on. Each case is a law unto itself.

He believes that whichever method is used, the after-treatment is at least as important as the operation itself.

Biggs, T. J., Stamford, Conn.: Fistula in Ano.

John Hatter, of Stamford, Conn., American, age 39; admitted at Sound View Hospital September 6, 1897.

Examination revealed a complete fistula in ano, two and one half inches in length, of large caliber, and of ten years' standing. Around the anus a complete ring of hemorrhoids. Beyond this, two inches up within the rectum, were four ulcers, from the size of a split pea to that of a dime. Patient had been a large man, weighing 195 pounds, with great strength and vitality; but notwithstanding this, and the efforts of many physicians with many and various treatments during the last ten years, the course of the case had been steadily downward. Complicating this pathological picture, there was chronic constipation, with hepatic torpor. The patient being in an extremely nervous condition, it was decided to put him on a few days' preparatory treatment before operating. After regulating the secretions, he was put on two drachms phosphate of soda in hot water, night and morning, and a diet of bovinine and milk, with rice; the bovinine a teaspoonful in half a glass of milk every two hours; the rice three times a day.

September 14th, after preparing the patient by thoroughly washing out and sterilizing the parts, and anesthetizing him, a double operation was performed, which consisted in a division of the sphincter muscle through the fistula and scraping out the sinus; after which, a modified Whitehead operation, one inch of gut being removed. The two larger ulcers, an inch and a quarter from the anus, remained. These were touched up with a 25 per cent. solution of pyrozone. The wound made by the removal of the fistulous sinus was then thoroughly irrigated with hot Thiersch solution, and packed, as well as the rectum, with sterilized gauze saturated with iodoform-bovinine. This packing was changed every twenty-four hours up to September 20th, after which pure bovinine was employed in the same way, changing the dressing three times a day. Before each dressing the wounds and ulcers were washed out with Thiersch, and then thoroughly cleansed by the bovinine-peroxide process. On the 22d the stitches were removed, the line of union being perfect around the anus, and the fistulous wound rapidly filling under the topical blood nourishment. On the 28th the ulcers in the rectum

were entirely healed, leaving now only a small surface over the site of fistula unhealed. On the 30th this wound was also nearly healed, patient having regular daily defecations normal in quantity, and feeling altogether like a new man. October 3d, discharged absolutely well.

Remarks: This case is unusually interesting from the fact that all other treatments—prominent among them Prof. Pratt's dilatation—had been employed during the long course of the disease, but no results whatever could be attained. Also from the bovinine or topical blood nourishment producing such a rapid repair, while internally keeping up the patient's strength throughout, as his principal diet. The sequel will be under observation and report.

FOSTER, B. B., PORTLAND, ME.: COMMON DISEASES OF THE RECTUM. (*Journal of Medicine and Science.*)

The author is of the opinion that the rectum is more often diseased than we have been in the habit of thinking, and there is only a fractional part of the literature on this subject that is found on almost any other.

Pruritus is classed as one of the most troublesome conditions affecting the anus and contiguous parts, and while it may be a disease *de novo*, it is, as a rule, one of the symptoms of some other disease of the rectum, like fissure, dysentery, chronic ulcer, polypus, and hemorrhoids. When not traceable to any of these conditions it must be treated by hot applications, followed, after drying, with drying powders, as Fuller's earth, acid boric, and bismuth and boric acid; or it may be painted with weak solutions of silver nitrate.

Fissure of the anus Dr. Foster classes as one of the most frequent diseases of the rectum, and one which is more often not recognized, either from refusal of patient to submit to an examination or from the fact that it is not believed that so much trouble and pain can be caused from apparently so small a lesion. As a cure for this condition dilatation of the sphincter muscles is recommended, and if the edges are hard and indurated it is advisable to cut them away or scarify them thoroughly; or if the base is indurated, cut through the same and through the superficial fibers of the sphincter muscle upon which it rests.

Curetting the base often gives good results. Much may often be accomplished by the application daily of nitrate of silver solution of the strength of ten grains to the ounce. This is one of the diseases in which a positive cure can be promised.

External tags should be amputated and sutured with continuous suture, or, preferably, the interrupted suture.

The following are his conclusions:

1. Remember to operate upon all cases of fistula where there is sufficient vitality or nutrition to heal the wound. Always divide the fibrous membrane at the bottom of the tract and pack the wound to the bottom for the purpose of healing by granulation.

2. Remember to always open abscesses early to prevent fistula in ano.

3. Remember if you operate on a fistula in a tuberculous patient, give him the benefit of the doubt.

4. Remember that you should never fail to examine your patients thoroughly for small arms leading out from the main tract, and examine for an associate stricture, which may be the cause of the fistulous tract.

5. Remember that you are never to cut the sphincter but once in any operation, and be careful and warn your patient of the danger of incontinence.

6. Remember that you are to confine your patient in bed, not trusting to the care of the nurse exclusively. Tuberculous cases should be an exception to the rule; give them moderate exercise and fresh air.

7. Remember that physiological rest is the first principle in the cure of all disease.

8. Remember that in all operations involving the rectum it is good surgery to dilate the sphincter.

9. Remember that all cases of fistula in ano should be operated upon, and best by the knife, except in cases of Bright's disease, cancer, cardiac and hepatic affections.

Van Schaick, V. V.: The Non-Surgical Treatment of Some Rectal Diseases. (*International Journal of Surgery.*)

The author states that the mode of election in the treatment of diseases affecting the rectum and anus practically always

involves an operation of a more or less bloody character. In some cases patients refuse any operative interference, and some other means must be used for their relief.

Dr. Van Schaick advises the splitting of the pile and turning out the clot in inflamed piles, but when this is not permitted suggests attention to the bowels, soothing and astringent ointments, and hot or cold applications. As a temporary agent in bleeding piles, diet, ointments, regulation of bowels, injection of astringents, and insertion of ice are recommended.

For fissures and ulcers affecting the anus, the following may be used: Suppositories of ichthyol, iodoform ointment, calomel in proportion of eighty grains to an ounce of vaseline, one-half grain solution of nitrate of silver; and if the use of a speculum be permitted in order to get some cocaine applied, an incision through the superficial muscular fibers can be made.

As for fistula, the writer states that medical treatment pure and simple is absolutely ineffective, an operation being always indicated in all who are in a condition to stand it.

Should such a patient present himself, or one who refuses any operative interference, the tract must be first thoroughly disinfected with hydrogen dioxide injected by means of a long nozzle syringe. Instead of the latter, a blunt pointed rubber tip syringe may be used. The use of gelatin bougies, in the opinion of the writer, sometimes results in a cure when used after the hydrogen dioxide. As a *dernier ressort* the following may be tried: Injection of two-grain solution of nitrate of silver or solid stick, curettage after injection of cocaine in the tract, application of some irritating substance to tract, as compound tincture of benzoin, after cocaine.

Earle, S. T., Jr., Baltimore: A Substitute for Whitehead's Operation for Hemorrhoids. (*Virginia Medical Semi-Monthly.*)

After referring to an article by Dr. Edmund Andrews in the October, 1895, Quarterly, in which attention was forcibly called to the bad results following the Whitehead operation, in which the author fully agreed, the following procedure is advised:

Given a case of combined internal and external hemorrhoids

encircling the entire circumference of the anus, such a case as is considered a typical one for Whitehead's operation, first remove each internal hemorrhoid by the method heretofore described in the February number of the *Virginia Medical Monthly*, page 1160, which, in brief, consists in catching each at its apex with a pair of catch forceps, raising it up, then grasping its base with clamp forceps, cutting off the hemorrhoid even with the upper surface of the forceps, and then running a continuous suture beneath and above the forceps the entire length of the cut surface; now slip out the forceps, and draw the continuous suture tight. When all of the internal hemorrhoids are so treated, we then treat those that are external. The usual condition in these cases is not one of distinct hemorrhoidal tumors, but a general varicose condition of a large number of vessels surrounding the anus, which is manifested by tumefaction and a nodular appearance of the vessels directly beneath the skin and in the subjacent tissue. An incision is now made with the scissors from behind forwards—first on one side and then on the other of the anus—letting it run directly over the apex of the tumefaction, but do not extend it beyond the anterior commissure of the anus on either side. Now dissect the skin back on each side of the tumefaction, from the mass of varicose vessels below, then with the curved scissors cut out the mass of varicose vessels, with its attending adipose tissue, taking care to get it all out.

The cut skin surface is now allowed to fall together, when one can readily see how much skin can be spared from each side. This is then cut off, and the wound closed by a continuous catgut suture. The straight incision is to be preferred over the tumefaction to the practice of taking out an elliptical piece, because one can better judge of the quantity to be removed after the varicose vessels have been taken out and the skin allowed to take its place.

Care should be taken in closing up the wound, that at least several of the stitches on each side should include the tissues at the bottom of the sulcus, in order to compress all oozing vessels, and thus avoid any extravasation of blood and dead spaces.

After each side of the anus has been thus treated, apply a compress made wet with a solution of No. 1 Calvert's carbolic acid, one to thirty or forty of water. This is to be preferred to

iodoform, aristol, or any of the dry antiseptic powders, because it has been found to be much more efficient in preventing suppuration, and it is not irritating.

About forty cases have been treated by this method without a single unfavorable result; and it is the rule, with few if any exceptions, that all cases thus treated are out and leave the hospital or their homes by the ninth day.

All hemorrhoids and varicose vessels should be removed completely. No recurrence can possibly take place if this precaution is taken. This method of operation leaves intact the band of tissue just at the base of the columns of Morgagni, where most of the papillæ are found, in which are located the endings of the tactile nerves.

Coston, H. R., Fayetteville, Tenn.: The Treatment of Hemorrhoids. (*Medical and Surgical Reporter.*)

In contrasting the clamp and cautery operation with the ligature operation for hemorrhoids, the author has these points to make in favor of the clamp and cautery:

1. In the operation with the ligature you tie up the most sensitive of all nerve ends, and there is intense pain, which will be kept up until the stump sloughs and the ligature comes off. In the cautery operation the nerve end is simply cut away and cauterized, and there is nothing left for it to do but cicatrize, and it is left in the very best possible condition for this.

2. The ligature may slip off and secondary hemorrhage occur; after the clamp and cautery operation there is no danger of secondary hemorrhage. If hemorrhage occur, it occurs immediately, and the operator can only blame himself for it.

3. There is no danger of a recurrence. Kelsey, of New York, and Smith, of London, who have a large experience with this operation, support me in this statement. It will be admitted that recurrences do follow the ligature operation.

4. Convalescence is much more quickly completed, for the reason that it begins at once under the eschar produced by the cautery, and would be completed by the time the ligature comes away should the two operations be used on separate tumors in the same case.

5. The mortality following the clamp and cautery operation is practically *nil.*

6. The clamp and cautery operation requires less after-care from the operation.

7. There are no unpleasant sequelæ.

GASTRO-INTESTINAL DISEASE.

DAVIS, N. S., JR., CHICAGO: THE TREATMENT OF CHRONIC ENTERITIS, AND THE UTILITY OF EUDOXINE AS AN INTESTINAL ANTISEPTIC. (*Medical Standard.*)

After a description of the history and symptoms of chronic enteritis, the writer continues as follows in regard to the treatment of cases of enteritis involving the small intestine almost exclusively:

It goes without saying that the first indication for treatment is to introduce into the intestinal tract only those substances which will be least irritating to it, and which will call upon it for the least amount of work. In other words, the digestive power of the stomach should be utilized for all that it is worth, and the digestive power of the small intestine should be taxed as little as possible. The second and equally imperative indication for treatment is to keep the intestinal tract as clean as possible. This can only be accomplished by provoking frequent and thorough emptying. The foods which are best adapted to these cases are the albuminous ones; indeed, many patients who resist all other forms of treatment will recover in a comparatively short time if they adhere strictly to a meat diet. The meat which they can take with least discomfort is steak which has been carefully subdivided, either by scraping, chopping, or by putting it through a meat separator, by means of which the steak is reduced to a fine pulp and much of the connective tissue fiber removed from it. After the meat has been prepared in one of these ways it can be slightly cooked and seasoned with pepper and salt. It can be eaten either as a hash or made into patties or meat balls, as the patient may prefer. It is made somewhat more agreeable if, when it is served, a strong beef tea is mixed with it as a gravy. In addition to meat thus prepared patients may be allowed for variety lettuce or salads without dressing. They may also be permitted to use a small amount of dry toast or crackers. It is best for them to take before each meal one or two teacupfuls of hot water.

Some cases may recover on a diet of this kind without the use of medicines, being allowed, after several months, to grad-

ually return to an ordinary mixture of foods. Free indulgence in water is not contra-indicated.

While this diet is the best one for severe cases of chronic enteritis, a very large number of cases will do well upon a much more varied regimen. They can be instructed to use tender, lean meats, soft cooked eggs, and fresh fish. They can be permitted to take sparingly of the ordinary green vegetables, such as peas, string beans, spinach, lettuce, and tomatoes. They can have dry breads, crackers and toast, and a little of cooked fruits which are not made too sweet. They should carefully abstain from soups, from all fat and greasy foods, from most starchy and very sweet foods. A modified albuminous diet, such as this, taxes the digestive power of the small intestine comparatively little. It excludes from use the fats and starches, which are the most difficult for an inflamed intestine to digest. Except in the mildest cases, tea, coffee, and alcoholics should be forbidden. Water and skimmed milk can be drunk.

In order to maintain the intestines as clean as possible, it is best at first to stimulate bowel movements and flush the bowels by means of mild salines. For instance, a single dose of Carlsbad salts, dissolved in a glass of water and taken in the morning, will, in most instances, sufficiently empty the bowels and at the same time wash them by provoking thin movements. So soon as the urine indicates the absence of indican, and the passage of gases from the bowels ceases, or almost ceases, a change can be advantageously made from saline laxatives to tonic laxatives. Cascara sagrada, aloin or similar drugs, in doses which will not provoke diarrhea but will regulate the movements of the bowels by increasing their muscular activity, can be employed.

In many instances a careful regulation of the diet, with mild laxatives, is all the treatment that is required. When, however, intestinal fermentation is considerable, it is desirable to also use the so-called intestinal antiseptics. An albuminous diet introduces into the intestines foods which are as little likely to ferment as any, and therefore limits very greatly the need of these antiseptics. It is impossible by the employment of such drugs to prevent fermentation in the intestines, but they certainly are useful in lessening the amount of fermentation that takes place there. They must be looked upon as adjuvants to the dietetic

and laxative treatment. Those intestinal antiseptics which are most efficient and have been longest used are naphthol, salicylate of bismuth, salol, and turpentine. In addition to these the subgallate of bismuth is often prescribed. Small doses of calomel can also be given from time to time with advantage.

The writer states that for several months he has been using one of the newer preparations of bismuth, called eudoxine. It is a combination of iodine and bismuth. The exact chemical nature of it is indicated by its chemical name; it is the bismuth salt of tetra-iodo-phenolphtalein. It contains 52.9 per cent. of iodine. It is tasteless and odorless. It can be taken in large quantities without producing any disturbance of the system. It passes through the stomach without change, unless the stomach happens to be alkaline in reaction; but when it reaches the alkaline juices of the intestines it is split into bismuth oxide and sodium tetra-iodo-phenolphtalein.

Like other bismuth preparations, it is a mild anti-emetic, but it is not as efficacious as subnitrate of bismuth in this respect, but it is much more efficacious as an antiseptic.

It seems to check intestinal fermentation more promptly and certainly than any of the other intestinal antiseptics, excepting naphthol. As it is much more agreeable to take, and apparently entirely harmless, it is of the two drugs most eligible. Especially is it eligible for the treatment of children. The best effects can be obtained by the frequent administration of the drug.

Pettyjohn, E. S., Alma, Mich.: Functional Gastric Diseases and Their Treatment. (*The Physician and Surgeon*, July, 1897.)

In the term functional gastric diseases are included all those abnormal conditions of the insufficiency of solution and preparation, of selection and absorption of food due to causes other than some anatomical organic lesion of the stomach, conditions dependent on alterations of the nerve supply direct or the nervous system more remotely.

The author states that a diagnosis is arrived at by a method of exclusion, in which all modern methods of precision are to be used. As inspection and palpation yield but little, the general symptoms and the use of the stomach-tube and chemical analyses must be relied upon.

The gastric secretory nerve is the vagus, when stimulated as a whole or at its terminal distribution. There may be an interference with the circulation and secretions of the stomach as well as variety of sensation, muscular movement, and in the quality of the gastric juice and the quantity of gastric ferments. Vascular reflex is often present in the stomach from mechanical, chemical, and psychical influences, the temporary shock constricting the arterioles of the glands and membranes, impeding the secretion and changing the quality of the digestive fluids. Any nervous phenomenon that withdraws blood from the stomach causes functional disturbance of that organ and deranged digestion.

Among the causes of functional diseases of the stomach the author mentions the following: Irregular hours for meals, and eating between meals; drinking large quantities of cold beverages with meals; failure in preparing and selecting food; much brain work directly after eating heartily; constipation, fermentation being engendered by the presence of bacteria.

Dr. Pettyjohn recommends hot fomentations to the entire spinal cord to increase the nerve supply of the stomach. The following is recommended as a functional stomach tonic:

℞ Pulv. ipecac ..... gr. $\frac{1}{6}$;
Aloin ..... gr. $\frac{1}{16}$;
Ext. nucis vomicæ ..... gr. $\frac{1}{6}$;
Ext. gentianæ ..... gr. 1;
Piper nig. pulv ..... gr. 1.
M. Fiat pil. No. i. Sig: One an hour after meals.

For a generally weakened digestion or simple indigestion the author uses the following diet table: Take every two hours from a wineglassful to a gobletful of peptonized milk, matzoon, or whey; or a teacupful of clam broth, beef tea, or any meat broth slightly seasoned and with the fat all skimmed off; or the same quantity of rice-water, barley-water, toast-water, gum arabic-water, or white of one egg beaten with water, using each alternately, so the patient does not tire of any. Broths and bouillons are mainly stimulants and not nutriments, so do not require digestion.

In hyperacidity the author uses the following diet: Broiled lean beefsteak or mutton chop scraped so as to obtain the pulp

and juice, avoiding the fiber and fat; finely chopped or three-times-ground lean beef after the removal of all the fat and gristle and then broiled over the coals, not over three and one fourth ounces at once; eggs, soft-boiled, poached, or scrambled in milk with a little butter; eggs and milk made into a baked custard without sugar; stale white wheaten bread (the best homemade bread is preferable) well toasted, and a very little butter; good, fresh gluten wafers; water crackers; zweiback, unsweetened; puree of celery, or peas, or beans; white potatoes or tomatoes prepared in the same delicate manner, that is, first thoroughly cooked, then rubbed through a colander and made into a thin, smooth puree with water, the whole being seasoned lightly with salt.

Thomas, J. Lynn, Cardiff, Eng.: Colitis in the Adult. (*British Medical Journal.*)

The following treatment is recommended: For severe cases, milk diet and rest in bed; for the milder cases, abstention from fruits and vegetables, a considerable amount of milk daily, and the less exercise the better. Even mild excitement, such as going to church, ought to be avoided; Sunday morning is invariably found to be the worst in the week with these patients.

With regard to drugs, purgation seems unreasonable, and is certainly very unsatisfactory; even those cases in which one is led to suspect an accumulation of feces high up do not gain much benefit from purgation, and the fact of retention ought to give rise to a serious suspicion that cancer or some narrowing of the gut exists, even if there be little pain and no sign of such a complication. The smallest purge has had bad effects in all the cases seen by the author which were uncomplicated. Even a single slice of apple or a small quantity of any raw fruit generally causes most distressing diarrhea, which is frequently prolonged.

The drug most relied upon is dilute sulphuric acid; 10 minims three or four times a day, with a very little opium and a carminative, generally controls the diarrhea quickly. When this good effect is produced the drug ought to be continued as required, a loose morning motion being followed by a dose, and should diarrhea again come on, the mixture should be regularly taken, but never should the first dose be taken before the first

motion; the distension then caused is most distressing. If sulphuric acid fails, large doses of catechu, or bismuth and salol, may be tried, and these failing, 10 grains of sodium bicarbonate, with dill water, act as a sedative if nothing else.

In certain cases, in which the descending colon is attacked, the passage of a long tube and injection of a strong solution of nitrate of silver (ʒ ss-ʒ 1 to 1 pint distilled water warmed) is an admirable remedy; it should be administered with caution, but frequently results in absolute and immediate cure, the after-colic being but a minor evil easily combated.

Opium is merely of service during the early stages, or after diarrhea has been checked. In some cases strychnine acts as a good tonic, but the early administration requires caution.

Power, D'Arcy, Chelsea, Eng.: Pathology and Surgery of Intussusception. (*British Medical Journal.*)

In the Hunterian lecture on this subject Dr. Power gave the following conclusions:

Intussusception is a condition which brooks no delay in its treatment, for something must always be done at once, except, perhaps, in those slight cases which are indistinguishable from severe colic. In all doubtful cases purgatives should be completely withheld. Cats and rabbits bear a simple invagination with remarkable freedom from symptoms, and after a varying period of time the invaginated bowel could be excised and the animal would recover. All the animals, however, to which purgatives were administered after the intestines had been invaginated died when enterectomy was performed. Clinical evidence teaches the same lesson, for all the records of cases show that the symptoms have been seriously increased when the patient has been purged. The routine treatment of intussusception is to chloroform the patient, and steadily to fill his large intestine with hot salt solution under a hydrostatic pressure of not more than three feet in a child, the fluid being allowed to remain in the intestine at least ten minutes. The earlier this method is adopted after the appearance of the symptoms the better are the results obtained; but it should not be adopted in enteric intussusception, in cases where the symptoms are very acute, or in those where the absence of signs or symptoms, with a subnormal temperature, leads the

surgeon to suspect that the intestine is becoming gangrenous. In these cases, and when the intussusception is not reduced after irrigation has twice been tried, and when after reduction the intussusception has thrice occurred, the abdomen must be opened.

The surgeon must then be prepared to deal effectually with the conditions he may find by such operative means as he can carry out with the least amount of shock and in the shortest space of time that is compatible with the safety of the patient. This will be insured if he uses the method with which he is the most familiar. But he should bear in mind that hardly a case can arise in which he is justified in closing the abdominal wound without at least an attempt to complete the operation by reducing or removing the intussusception. Such half measures as the formation of an artificial anus are hardly ever justifiable, and the results obtained by them are usually most disastrous. In the light of our present knowledge it appears that the use of a button or bobbin is most likely to give good results when enterectomy has to be done for an enteric intussusception, while Maunsell's operation is best adapted for the cure of ileo-cecal and colo-colic forms of intussusception.

Clubbe, P. B., Sydney, Eng.: Notes on Fifteen Cases of Intussusception. (*British Medical Journal.*)

In the fifteen cases recorded, eight recovered and seven died. In three cases the intussusception was reduced by injection of oil without operation, leaving twelve celiotomies with five recoveries. In one of the cases that recovered, four inches of the small intestine were resected, and this in a child under twelve months. In a previous report the author recorded seven celiotomies with four recoveries, the total being nineteen cases, nine recoveries and ten deaths.

The author concludes the detailed report of this series as follows:

These cases show that we must not give up rectal injections. In a certain number of cases the intussusception can be reduced by this means even when used a considerable time after the onset of the attack. In Case 1 the child had been ill thirty hours, Case 4 forty-eight hours, and Case 9 only seven hours. I wish to emphasize this because Mr. Owen, in the current *Yearbook of*

Treatment, in his very kindly notice of my previous paper, remarks "that we shall probably obtain better results if we altogether discard the treatment by rectal injections." In Case 14 I opened the abdomen after using an oil injection because I fancied I could still feel a small hard mass. As it turned out I was wrong, and should have done well to have waited, for I found that the intussusception had been completely reduced; and the child unfortunately died in forty-eight hours of sapremia as the result of the abdominal section. The injections, if they are to be of any use, must be given intelligently. An anesthetic must be given, the buttocks must be raised, and warm olive oil injected by means of an ordinary enema syringe. If the anus is held around the nozzle of the syringe, very considerable pressure can be exercised on the column of oil. Common sense must tell us how much pressure to put on and when to desist. The amount of pressure could be accurately measured by allowing the oil to run in of its own weight from a special apparatus, but this is not always at hand. After apparently reducing the intussusception by injection, be careful not to lose sight of the child for a few days, even though the symptoms disappear and it passes a natural motion. The intussusception is very liable to recur. Case 15 is an example of this.

I think injections of warm oil should be given in all cases after the child is under the anesthetic, even in cases of long standing when we know that it is impossible to complete the reduction by this means. My reasons are these: It always reduces the intussusception to a certain extent, and in the best and gentlest possible way; and in this way lessens the shock of the coming operation, because it lessens the manipulation of the intestines. It is especially useful in those cases in which we find the intussusception in the rectum; because if we do not use it we may find some difficulty in getting our fingers below the tumor to begin the squeezing process. After opening the abdomen in cases of long standing, where we find that the intussusception stops moving to gentle pressure, I think it would probably be better to resect at once. One can nearly always reduce these intussusceptions if we take time and use considerable pressure; but after this prolonged manipulation, which must add enormously to the shock, we probably find when the reduction is

completed that the bowel is torn so much that we have no alternative but resection, which we now have to do under the worst possible conditions. I feel sure that in these bad cases we shall get better results by resecting directly we find that force must be used. I am strongly in favor of draining in all these cases by means of a small gauze drain surrounded by a piece of gutta-percha tissue placed just within the abdominal cavity; this can generally be removed in twenty-four hours.

Walker, T. H., Detroit, Mich.: Diagnosis of Gastric Carcinoma. (*Physician and Surgeon*, July, 1897.)

Gastric carcinoma are more frequently met with between the ages of thirty-five and sixty-five, equally in both sexes. Symptoms develop more slowly in the pyloric form, the pain, nausea, deranged appetite, constipation, and vomiting are like those of chronic gastritis. Carcinoma may develop on the site of an old ulcer, and this must be taken into consideration in the diagnosis. The tumor is not always easily palpated even in the last stages. Pathological changes in the physiology of digestion are of great assistance in making a diagnosis.

Dr. Walker states that the stomach should be empty of the previous meal before the introduction of the test meal, using the siphon method. The amount of contents removed at the end of an hour after the ingestion will indicate the motor activity of the stomach, a large amount, one hundred cubic centimeters and over, indicating an atony, a condition which progresses rapidly with carcinoma. Absence of free hydrochloric acid is no longer considered pathognomonic of the presence of cancer.

The presence of lactic acid, while not pathognomonic, is suggestive and a help in the diagnosis; for even with no tumor palpable, the absence of free hydrochloric acid, presence of lactic acid, and the characteristic physical signs are in favor of the diagnosis of gastric carcinoma, and surely sufficient to warrant an exploratory incision.

Bettman, Henry W., Cincinnati: Acute Dilatation of the Stomach. (*Cincinnati Lancet-Clinic.*)

The author states that there is such an affection as acute dilatation of the stomach; that it is fairly uniform in its onset,

course, and tendency to a rapidly fatal termination; that the treatment must be prompt and active, and that some lives may be saved by early recognition of the condition and energetic treatment. His conclusions are as follows:

1. During the course of or convalescence from some acute or chronic disease the stomach may undergo rapid dilatation.

2. This condition is marked clinically by a sudden and violent onset; vomiting is violent and intractable; large quantities of fluid are ejected; the fluid is bile. The patient is reduced to a state of collapse or exhaustion, which may prove fatal in a few days.

3. During the progress of the disease the abdomen becomes distended, the right hypochondrium remaining flattened. The bowels move spontaneously, and a splash may be elicited over the site of the distension. The mind usually becomes clouded.

4. If treatment is unsuccessful the distension of the abdomen increases, vomiting ceases, and the patient dies of exhaustion.

5. The indications for treatment are, first, supportive measures, and, second, the use of the stomach-tube one or more times as early in the case as possible. Rectal feeding should be resorted to, and nothing should be allowed "by the mouth" until the vomiting has been nearly or quite controlled.

6. Treatment without lavage is unavailing, and the use of narcotics worse than useless.

FRIEDENWALD, JULIUS, BALTIMORE: THE ACTION OF TAKA-DIASTASE IN VARIOUS GASTRIC DISORDERS. (*New York Medical Journal.*)

From a number of original experiments and investigations the author arrives at the following conclusions in regard to the action of taka-diastase in gastric disorders:

1. That taka-diastase exerts no influence under normal conditions upon gastric digestion nor upon cases of nervous dyspepsia with normal motor and secretory functions.

2. That in cases of motor disturbances of the stomach with normal secretory functions, such as atony, taka-diastase increases the motor action without in any way influencing the secretory function or the digestion of starches.

3. That in cases of subacidity taka-diastase acts differently,

according to whether there is a catarrh or a nervous dyspepsia. In nervous cases it has no effect whatever upon digestion, while in cases of catarrh it appears to have a tendency to increase the flow of acid and promote the digestion of starches.

4. That taka-diastase exerts its most favorable influence in cases of superacidity. It not only promotes the digestion of starches in these cases but diminishes the excess of acid and increases the motor function.

5. That taka-diastase in a great measure replaces the saliva when this secretion is diminished or absent. It then not only digests the starches in the stomach, but serves the other function of the saliva in stimulating the gastric secretion and therefore promoting the proteid digestion.

Murdoch, F. H., Pittsburgh, Pa.: The Diagnosis and Treatment of Chronic Gastric Catarrh. (*New York Medical Journal.*)

Among the symptoms mentioned were coated tongue, loss of appetite, distress in stomach, bloating and belching, nausea and vomiting, vertigo, palpitation of the heart, constipation, insomnia, headache, loss of energy, and diminution in weight.

Chemical examination of the stomach contents after a test meal is an important measure, but unless more than one examination is made it may prove misleading.

In diagnosticating chronic gastric catarrh the following must be excluded, the gastric neuroses, ulcer, cancer, and atrophy of the gastric glands. In regard to atrophy of the glands, a constant absence of rennet and the rennet zymogen forces one to diagnose this pathological change.

As regards treatment, the patient should be advised to sleep in a well-ventilated room; keep regular hours; meals at stated intervals; eat slowly; masticate food thoroughly; drink nothing with meals; bathe frequently; regular, open-air exercise, and a daily morning evacuation. Diet must be selected for each individual case; avoidance of proteids if hydrochloric acid is absent; milk if rennet is absent, substituting kumyss and buttermilk, and the administration of take-diastase in absence or diminution of the saliva; hydrochloric acid if none is being secreted. Lavage, if there is much mucus, should be employed.

Book Reviews.

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia; Attending Physician to the Medico-Chirurgical and Samaritan Hospital, Philadelphia, etc. Illustrated. Publisher, W. B. Saunders, Philadelphia.

The progress has been so rapid in the science of medicine in the last decade that it is gratifying to see men write books on the subject that keep apace with the advancement. The author is eminently qualified for this work. A teacher of eminence for many years, a clinician of varied experience, and a practitioner of unusual opportunity, fits him to give to the profession a work on practice of real and positive worth, which he has done. The author has attempted to write a book suitable to both the busy practitioner and the student at college. He has very wisely tabulated differential diagnosis, and the reader will be greatly benefited by these diagnostic tables. To those in the profession who have not had the time nor opportunity to study elaborate works on etiology and bacteriology the book will be of great service, because it contains concisely all that is necessary to know on the subjects. Modern thought obtains throughout the book. For instance, under the head of tuberculosis the following definition is given: "A chronic (less frequently acute) infectious disease caused by the bacillus tuberculosis." The sooner this definition is accepted the better, for from this standpoint alone is the ravages of this dread disease to be combated and stopped. The old idea that tuberculosis was strictly an "inherited" disease is dispelled by the author, and the *hereditary* tendency given its proper significance. Then, too, the author is explicit in naming the different localities of the body which are liable to undergo tuberculous attacks. Grave mistakes are often made by not recognizing this fact and giving a local point radical treatment, in order to save the patient from general tuberculosis. This one subject only is selected to show the excellent and accurate way of the author's style, but on all subjects treated it will be found that the book is abreast of modern thought. The

work is issued in one volume of 1,259 reading pages. The publisher has again "scored a notch" in issuing a book perfect in form and lovely to look upon. Prices, $5.50 and $6.50, net.

About Children: Six Lectures given to the Nurses in the Training School of the Cleveland General Hospital in February, 1896. By SAMUEL W. KELLEY, M. D., Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons (Med. Dept. Ohio Wesleyan University); Pediatrist to the Cleveland General Hospital; Consulting Physician to the Cleveland City Hospital; President, 1896 and 1897, Ohio State Pediatric Society: Editor *Cleveland Medical Gazette.* 180 pages. Price, in buckram, post paid, $1.25, net. Cleveland: The Medical Gazette Publishing Company. 1897.

This is a very entertaining and instructive little book, and while it makes no pretentions to be a text-book, it will serve that purpose admirably in nurses' training schools. It takes up rather in detail the "Peculiarities of the Anatomy in Infancy and Childhood," "Definition of Terms New-born, Infancy, Childhood, Youth," "Growth and Development, and Physiology." Lecture IV deals with "Symptoms and their Interpretations," and is one of the best written of the book, in which is considered the facies, cry, cough, breathing, pulse, and temperature, appetite, vomiting, bowel movements, pain, tongue, teeth, etc., it being a difficult task to discriminate in regard to how much to tell in a book of this character. Dr. Kelley has accomplished this task admirably.

Some common lay—and it is to be regretted, professional, too—superstitions are dispelled, among them being the classification of membranous croup with diphtheria, and the importance of proper quarantine and disinfection in the exanthemata. An appendix is published, giving some recipes for beef juice, whey, barley water, etc.

Constipation in Adults and Children. With special reference to habitual constipation and its most successful treatment by the mechanical methods. By H. ILLOWAY, M. D., New York City. New York: The Macmillan Co. 1897. Price, $4.

At first glance it would seem rather surprising that one could consume nearly five hundred pages in the consideration of one subject—constipation. Yet this has been done by Dr. Illoway, and very successfully and entertainingly too.

The first twenty-six pages are taken up with a description of the anatomy of the intestine, and it is somewhat surprising that a book of such pretensions should have gone so little into detail of the minute anatomy of the intestinal tract, so much does its function depend upon the normal secretions of these organs.

The author ascribes to the sigmoid the province of a reservoir for the feces, claiming that the rectum is always empty save during defecation.

Constipation is defined as a "delayed evacuation of the bowels," and a person is considered constipated who does not have a full, free evacuation once in three days at the farthest.

Acute and chronic constipation are considered in detail, with a number of clinical reports given of interesting cases.

The chapters on constipation in infancy and childhood are very complete, more so than those descriptive of the same condition in the adult.

It goes into detail regarding congenital constipation, with the relation of a number of interesting cases collected from medical literature.

The term "acquired" constipation is used to describe that form of constipation in children caused by neglect on the part of parent or nurse, or on account of the development of some morbid process subsequent to birth. The book is very interesting and instructive.

Pathological Technique: A Practical Manual for the Pathological Laboratory. By Frank Burr Mallory, A. M., M. D., Adjunct Professor of Pathology, Harvard University Medical School, etc., and James Homer Wright, A. M., M. D., Instructor in Pathology, Harvard University Medical School. With 105 illustrations. Philadelphia: W. B. Saunders. 1897. Price, $2.50, net.

The plan of this work is most admirable, and it will prove valuable as a reference and guide to those accustomed to doing post-mortem work, and should encourage others to undertake it oftener. Part I includes post-mortem examinations, external and internal examinations of the body; Part II, bacteriological examinations; Part III, histological methods.

Section 3 of Part II is a very important portion of the work—bacteriological examinations at autopsies—and has been much neglected in the past. It takes up in detail the various

steps in technique—methods of preparing culture media, of obtaining specimens, cultures, etc., and Section 3 takes up the inoculation of animals; Section 5 is descriptive of bacteriological diagnosis, and with the accompanying illustrations is very lucid indeed.

The authors have produced a very valuable book, a splendid book of reference to all, whether specially interested in this special branch or not.

Klemperer's Clinical Diagnosis. By Dr. G. KLEMPERER, Professor at the University of Berlin; first American from the seventh and last German edition; authorized translation by NATHAN E. BRILL, A. M., M. D., Adjunct Attending Physician, Mt. Sinai Hospital, and SAMUEL M. BRICKNER, A. M., M. D., Assistant Gynecologist, Mt. Sinai Hospital Dispensary, is announced for early publication by The Macmillan Company.

Dr. Klemperer's work on Clinical Diagnosis is widely known, and all English readers will be rejoiced to find within their reach this very comprehensive but condensed manual. Its chapters deal with the inspection and examination of the patient, the diagnosis of the acute infectious diseases, diseases of the nervous system, digestive diseases, each under its special symptomatology, diseases of the respiratory apparatus, the heart and circulation. Two chapters are devoted to urine analysis and to the diseases of the kidneys. The four concluding chapters deal with the disturbances of metabolism, the diseases of the blood, the Roentgen rays as diagnostic aids, and animal and vegetable parasites, including such bacteria as are of clinical importance.

No book so complete, short of a text-book of medicine, is before the American medical public. It has passed through seven editions in its original language (German) in as many years. The German school leads in clinical diagnosis, and this little work is an exquisite example of its methods.

Surgery of the Rectum and Pelvis. By CHARLES B. KELSEY, A. M., M. D., New York, Professor of Surgery at the New York Medical School and Hospital; Member of the New York Academy of Medicine, etc. Publishers, Richard Kettles & Co., 129 Fifth Avenue, New York.

An edition on "Diseases of the Rectum" by this author was reviewed in this Journal not long since and highly commended. It is well known by the profession that his reputation

was made as a *specialist* in *rectal* work. As an operator and author in this line he acquired considerable distinction. Just why the author now *appends* Gynecological chapters in his book is not clear. It is the consensus of opinion that no one should enter a *special* field until five years at least have been passed in general work. It is just as incumbent that "five years at least" should be given to *actual* work in the line of gynecology before one should assume to be an authority and "write a book." Indeed, it is difficult to understand to what class of readers this book is directed. If to those interested in rectal work, we would say, good, very good. If to those interested in gynecological work, why, much more can be learned by reading the works of *authorities* on that subject. The publishers deserve special mention for the splendid manner in which the book is issued, clear type, extra fine paper, and a very handsome appearance.

The Electro-Therapeutic Guide. By Wm. F. Howe, M. D., Ph. D., Indianapolis, Ind.

This book is intended as a guide or aid to the correct use of electricity in the hands of the general practitioner.

The average practitioner is not prepared for an intelligent use of electricity, not being able to recall or not knowing the many details necessary for its intelligent application. Intelligently applied it may be of the greatest value, but in the hands of the ignorant much harm may result.

Such a book should surely have ready sale, for it condenses the salient points of the practical part of electricity, besides giving much valuable information in regard to the technique of its therapy.

Essentials of Bacteriology. Being a concise and systematic introduction to the study of micro-organisms, for the use of students and practitioners. By M. V. Ball, M. D., Bacteriologist to St. Agnes' Hospital, Philadelphia. Third edition, revised. With 81 illustrations, some in colors, and 5 plates. Price, $1. Philadelphia: W. B. Saunders. 1897.

This is an extremely useful little book, and the fact of its already having reached its third edition since its first publication in 1891 is sufficient evidence of its popularity. The present edition is but little changed from its predecessors, there being a

revision of the chapter on "Diphtheria," and an added article on "Bacteriologic Examination of the Organs and Cavities of the Human Body" in the appendix. The illustrations are uniformly excellent, especially those depicting the various steps in the technique of bacteriological work. The chapter containing the description of the malarial organism is disappointing, as the developments in this special field would warrant a more extended notice.

The book is truly an "essential" to practitioners, especially to those whose graduation dates prior to the establishing of bacteriological laboratory work as obligatory in all medical schools.

Notes.

In January, 1898, The Philadelphia Medical Publishing Company, incorporated under the laws of Pennsylvania, will begin the publication of a weekly medical journal, to be called *The Philadelphia Medical Journal.* The company has a capital of $30,000, in shares of $10 par value, full paid and non-assessable. The management of the company is entrusted to a board of trustees, in which are representatives of leading medical schools. Those selected to serve for the first year are: Daniel Baugh, Esq., of the Jefferson Medical College; Charles William Bergner, Esq., of the Medico-Chirurgical College; Robert R. Corson, Esq., of the Woman's Medical College of Pennsylvania; W. W. Keen, M. D., of the Jefferson Medical College; J. Ewing Mears, M. D., of Philadelphia; S. Weir Mitchell, M. D., of the University of Pennsylvania; Thomas S. K. Morton, M. D., of the Philadelphia Polyclinic; Joseph Morwitz, Esq., of Philadelphia; John H. Musser, M. D., of the University of Pennsylvania; William Osler, M. D., of Johns Hopkins University; William Pepper, M. D., of the University of Pennsylvania; William Potter, Esq., of the Jefferson Medical College; John B. Roberts, M. D., of the Philadelphia Polyclinic; Charles E. de M. Sajous, M. D., of the Medico-Chirurgical College; William Thomson, M. D., of Philadelphia; James Tyson, M. D., of the University of Pennsylvania; Barclay H. Warburton, Esq., of Philadelphia; James C. Wilson, M. D., of the Jefferson Medical College; the President of the Philadelphia County Medical Society.

The editorial management has been entrusted to Dr. George M. Gould, whose high reputation as a medical editor guarantees a vigorous, high-toned, and interesting publication.

A thoroughly efficient business management will be arranged, which will ensure a large circulation and a valuable advertising department.

Published in Philadelphia, which for over one hundred years has been regarded as the medical center of the country, and under a strong and thoroughly representative management, the

cosmopolitan character and permanent success of this journal seem assured.

It will be conducted solely in the interests of medical science and the medical profession. The editorial columns and the advertising pages will occupy the same high plane of clean, independent journalism, free alike from the undue influence of individuals, of firms, or of schools.

In addition to the usual attractions of a first-class medical journal, there will be important new features of service to its subscribers, but with the view of securing promptly an unequaled circulation, the price of subscription has been placed at $3.00 per annum. It is hoped that you will actively support this important undertaking in the interest of the whole profession.

The editor particularly requests that original articles, clinical memoranda, etc., of value to practitioners shall be sent to him for publication in the early issues.

All subscriptions, papers, and correspondence should be addressed to *The Philadelphia Medical Journal*, Box 1573, Philadelphia, Pa.

THE Christmas *Ladies' Home Journal* opens with a page of pictures of beautiful children, selected from thousands of portraits. The children's holiday greeting is a pleasing introduction to the excellent articles pertaining to the great festal season. One of these interestingly describes Christmas in the Palace at Potsdam, telling how the German Emperor and Empress and the Royal children celebrate the day. There are also two admirable short stories, "Christmas at 'The Hollyhocks,'" and "Christmas at the Trimbles'."

A feature that will arouse widespread interest is the first letters of a series giving "The Inner Experiences of a Cabinet Member's Wife." They present an inside view of Washington political and social life, as has never before been done in any magazine. The letters will occasion much surprise. A reading of the first installment makes obvious the reason for withholding the writer's name.

Every reader of fiction will be delighted to find the opening chapter of Hamlin Garland's new serial, "The Doctor." Mary E. Wilkins carries her readers into her favorite realm, New

England, in one of her sketches, "The Christmas Sing in Our Village," and Lilian Bell, in her second letter from London, sums up her studies of English men and women at short range in keen and brilliant epigram.

Edward W. Bok points out how to make pleasanter the Christmas of the youth and the aged, and decries the use of slang by girls, and the habit of talking about one's ills. The only correct and authorized version of "The Lost Chord" ever published in this country appears, with an autograph note by its famous composer, Sir Arthur Sullivan.

Practical articles on Christmas tell of suitable things to make for gifts, and details games, amusements, etc. Mrs. Rorer, in addition to her cooking lesson, has an instructive article on candy-making, and another on how to set the Christmas dinner-table, and cook and serve the dinner. The excellence of the illustrations is striking, and in every feature the Christmas *Journal* is attractive and useful. By The Curtis Publishing Company, Philadelphia. One dollar per year; ten cents per copy.

THE following letter has been received from the United States Department of Agriculture, Division of Chemistry:

WASHINGTON, D. C., September 17, 1897.

Dear Sir: Under authority of Congress, the Department of Agriculture is investigating the extent and character of food and drug adulterations, and is desirous of securing all the information possible on the subject. Having been appointed special agent to inquire into and report upon this matter, the undersigned writes to request that you kindly furnish the Department all the information you have in regard to adulterations, together with any suggestions as to the best remedy for the evil.

(1) Do you know of any new adulterant? If yes, state what, and how used.

(2) Would a national food and drug law assist in preventing adulteration?

(3) Would uniform food, drug, and pharmaceutical laws tend to promote efficiency and purity?

(4) Please suggest what would best promote the interests of consumers and legitimate manufacturers and dealers.

(5) What is your opinion as to the extent of damage done legitimate business by imitation of brands, packages, etc.?

(6) To what extent do sophistication, misbranding, and injurious adulteration exist?

(7) Have State laws aided in preventing adulteration? To what extent?

(8) Would a national law assist State officials in properly executing the local laws?

(9) Have adulteration, sophistication, and misbranding increased or decreased?

Prompt replies to the above, together with any other information or suggestions, will be highly appreciated. Yours respectfully,

A. J. WEDDERBURN,
Special Agent.

Approved: JAMES WILSON,
Secretary.

WE are in receipt of a brochure by Dr. Lewis S. McMurtry, of Louisville, entitled "The Evolution and Perfection of the Aseptic Surgical Technique," which is a masterpiece, scientifically and typographically.

The article was read before the Southern Surgical and Gynecological Society, and is reprinted from its transactions. It has already received prominent mention in the medical press as a scholarly address.

It is upon the typographical work and the general make-up of the brochure that we wish to comment, the cover being of dark-green paper, the title of the article being upon a white slip pasted upon the front cover. This is an innovation of the make-up of a brocure, and will doubtless prove popular. It is from the house of John P. Morton & Company.

AT the Fourth Annual Meeting of the American Medical Publishers' Association, held in St. George Hall, Philadelphia, on May 31st, the following resolution was introduced and adopted:

WHEREAS, The Imperial Granum Company has announced the withdrawal of all its advertising patronage from the lay press, and signified its intention of using medical mediums only in the future; therefore be it

Resolved, That the American Medical Publishers' Association, in session at Philadelphia, hereby endorses and commends this action of the Imperial Granum Company, and further recommends this course to other manufacturers who desire the support and co-operation of the medical profession.

CORRECTION.—Through ignorance of the facts, in the October, 1897, issue of the QUARTERLY it was stated that the feature of the British Medical Association meeting in Montreal was the issuance of a Daily Bulletin, containing a full report of the proceedings of the day before in the various sections, and that it would be well for our American Societies to follow this example. Since then we have been informed by Dr. Frank Trester

Smith, of Chattanooga, Secretary of the Tri-State Medical Society, that this society as far back as 1893 published a bulletin containing an account of the proceedings during each day of the meeting. It gives us pleasure to acknowledge our error, and to give the credit which is due the Tri-State Society.

P. Blakiston, Son & Co. have just issued a book entitled Diseases of the Stomach: Their Special Pathology, Diagnosis, and Treatment, with sections on anatomy, analysis of stomach contents, dietetics, surgery of the stomach, etc., by John C. Hemmeter, M. B., M. D., Ph. D., of Baltimore.

The profession of this country needs no introduction to Dr. Hemmeter, all being acquainted with his writings in the current medical literature. A review of it will be published in the next number.

Pocket Case.—An extremely attractive and useful article has recently been issued by the Antikamnia Chemical Company, in the shape of an Antikamnia Pocket Case, to the entire medical profession of the United States. It contains several small boxes with a number of tablets in each of the various combinations issued by this company, of antikamnia with salol, quinine, codeine, etc.

The Pharmacologist is a new quarterly journal which has just been received, edited by F. E. Stewart, M. D., Ph. G., and published by F. K. Stearns, of Detroit, Mich., the subscription price being twenty-five cents a year.

The first number of the Journal of the American Psychological, Medical, and Surgical Society has just been received. It is edited by Thomas Bassett Keyes, M. D., LL. D., of Chicago, and is published quarterly.

Publisher's Notice.

Blech, G. M., Detroit: Successful Treatment of Chronic Rheumatism. (*Journal of the American Medical Association.*)

Chronic rheumatism, articular or muscular, is considered by the laity an incurable affection. The pain, stiffness—in other words, the disagreeable symptoms of rheumatism, however, drive them into the hands of physicians, usually after every kind neighbor's roots and liniments have failed.

It is this class of cases that the beginner in a community is most apt to get, the older physician's time being taken up with cases of a more or less acute character. Besides, the older physicians have prescribed once or twice for the rheumatic, but no cure being obtained he was dropped.

A few months ago the writer contracted chronic articular rheumatism and pleurodynia. It is therefore but natural that I should have paid some attention to this affection. Summing up my theoretical knowledge of the malady and my experience from actual practice, I think I can say without fear of contradiction that chronic rheumatism is a curable affection, and that every young practitioner could materially benefit his patients if he is willing to devote to them some time and labor.

Although this paper can neither deal with either the causes nor the pathology of the malady under consideration, I beg, for the sake of explaining my standpoint, to make these statements: (1) I am a firm believer in the fact that there are forms of so-called chronic articular and muscular rheumatism which are *never* following an acute attack? (2) That so-called gonorrheal rheumatism is not a rheumatic affection proper, but a complication of gonorrhea, and has no connection with rheumatism whatever. If Dr. Satterlee, in his excellent monograph (Geo. S. Davis, 1890), takes an opposite view, using "reason rather than empiricism" for his assertions, I speak from practical observation and actual experience among my own patients. That the same facts were observed by the most popular authorities every one

knows. Unacquainted as we are with the real etiologic factors of rheumatism, our treatment must be general.

I shall not copy all these rules and regulations as laid down in text-books, but will come to the point. *Hygienic* treatment is desirable wherever such can be carried out. If we know that a certain occupation, a damp domicile, bad surroundings of the patient predispose if not actually cause rheumatism, what is more desirable than a complete change? Dietetic treatment should be encouraged wherever there is a so-called rheumatic or gouty diathesis present.

Internal treatment is practically useless. Salicylates, potassium iodid, arsenic, iron, colchicin, and a host of other remedies have been tried, but with what success everybody knows. A friend of mine asserted enthusiastically that he could cure every case of rheumatism, provided the patient takes unusually large doses of natrium salicylicum, but I never tried it more than once. The untoward effects this drug caused were more than my patient, a robust fellow, could stand.

External applications are quite popular, and rheumatic liniment manufacturers reap a rich harvest (financially, of course). Occasionally, when there is much pain and tenderness, I prescribe an alcoholic solution of menthol, but expect a temporary effect only.

Electricity, both the faradic and galvanic current, is of little avail. Several years ago I treated a good many patients with this method. I had them come to my office daily for months, and then they went away dissatisfied, claiming that while they felt somewhat better from such a prolonged treatment, they expected permanent cures. From the strong faradic current I saw no benefit at all.

When I contracted this affection, which, by the way, located itself in my elbow and wrist joints of both hands, as well as in form of a pleurodynia (making me at first believe I had some heart trouble), I thought of going to our nearest watering-place —Mount Clemens. For various reasons, and on account of some cases demanding my personal attention, I could not do this, so I decided to try the dry-hot air treatment which was recently so highly praised in French literature. I purchased from Messrs. Frank S. Betz & Co., of Chicago, their arm and leg bath; took

four baths and was relieved. It occurred to me then that I was mistaken in my diagnosis. I then called on six parties, all of whom are my patients, afflicted with one or the other form of chronic rheumatism, with which affection they went around considering it of no avail to take further treatment. Relief followed immediately after the first bath in each of the six cases. Of course they would feel the symptoms return the next day. Then other baths were taken.

In every one of the instances complete relief from all symptoms was experienced, and now within two months no recurrence, although we had here the most changeable and undesirable weather, and although all of the patients took neither any medicines whatever nor did they change their mode of life, occupation, and surroundings. One patient goes to his damp rag-shop daily; the other patients continued their usual lives. No massage was practiced after the baths save that I anointed the hands or legs with a little vaselin.

Of the value of dry-hot air in chronic rheumatism there can be no question. Shoemaker, Bartholow, and other eminent authorities speak of it highly in their text-books on materia medica.

I have no doubt but what such treatment may prove of great utility in ankylosis, rheumatoid arthritis, similar affections and Bright's disease, but am fortunate enough not to have had as yet any practical experience with such cases, but undoubtedly will use my bath again should any such cases come under my observation.

The hot-air bath I use is a very neat looking piece of office furniture. It is an oxidized metal cylinder thirty inches long, fourteen inches high; a funnel and pipe of same material carry hot air from a nickel-plated heater to a hot-air distributer. There is no smoke or smell. By means of several valves the heat can be regulated. A thermometer registers the amount of heat. The cylinder is lined with asbestos, arm or leg rested in a Turkish hammock. There are attachments for arms, legs, and other regions.

115 Miami Avenue.

THE QUARTERLY SPECIAL TO THE DENVER MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

ROYAL GORGE—D. & R. G. R. R.

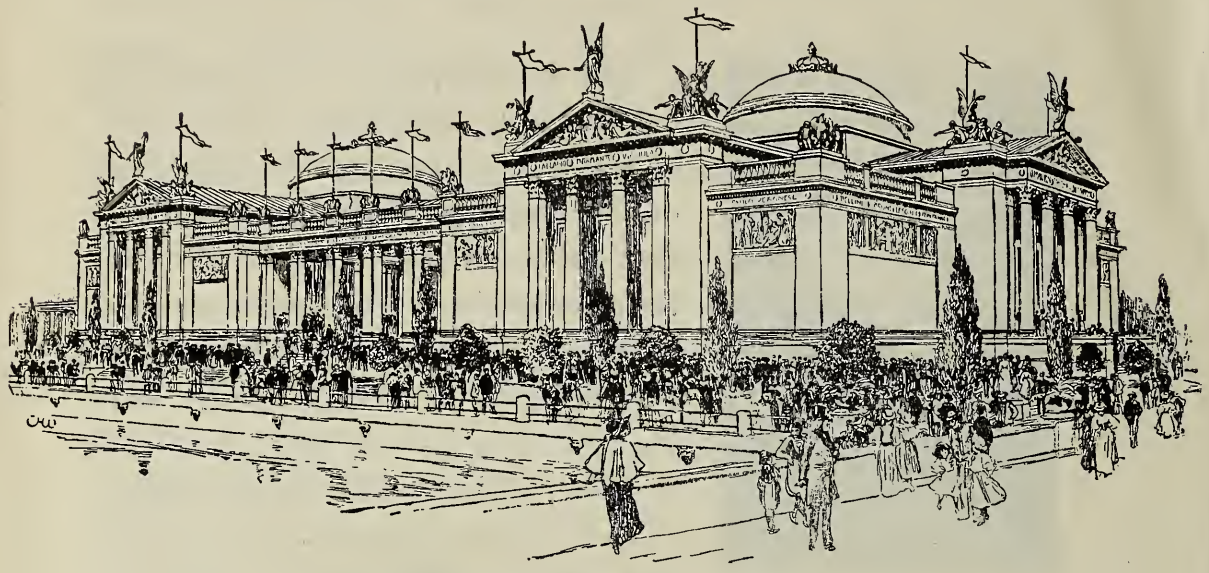
For several years it has been the custom for a special train to be run out of Chicago to the places of meeting of the American Medical Association, under the auspices of the Journal of the Association, and known as the "Journal Train." Those who have had the good fortune to go by this train have been loud in their praises of their treatment at the hands of those in charge, and of the pleasure at being in a doctors' special train.

This year, in June, the American Medical Association meets in Denver, and there is every indication that the visiting members and their friends will be royally entertained. The great draw-back to making this trip is the railroad fare, but the assurance that the rate will not exceed one fare for the round trip, and the liberal allowance of a thirty-day limit, will make the trip worth the taking.

The QUARTERLY SPECIAL will be run from St. Louis west to Denver, arrangements being made with all eastern, southeastern, and southern lines to connect at this point, selling through return trip tickets via Special from St. Louis to Denver. In this way the two trains will not conflict, but the QUARTERLY SPECIAL will really be run as an adjunct to the Journal Train. Besides the attractive program assured by the local committee, both of scientific and social character, there is much to be seen in Denver, and the surrounding Colorado scenery is incomparable.

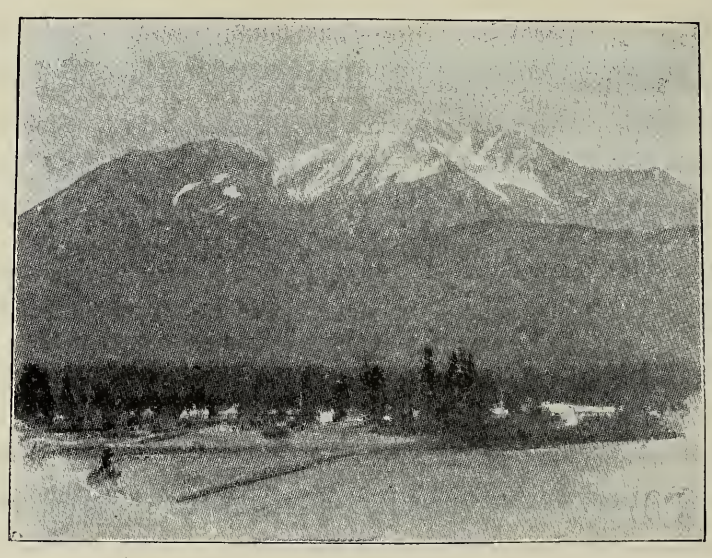
Another feature which will be much appreciated by all who go by the QUARTERLY train is the arrangement whereby passengers can stop on their return, inside the thirty-day limit, at Omaha, the "Enchanted City," where the Trans-Missis-

sippi and International Exposition will be open. Arrangements are already far advanced, plans have been definitely adopted, and



FINE ARTS BUILDING—OMAHA EXPOSITION.

the work of construction is being vigorously performed in all departments. The plans have been arranged on an elaborate

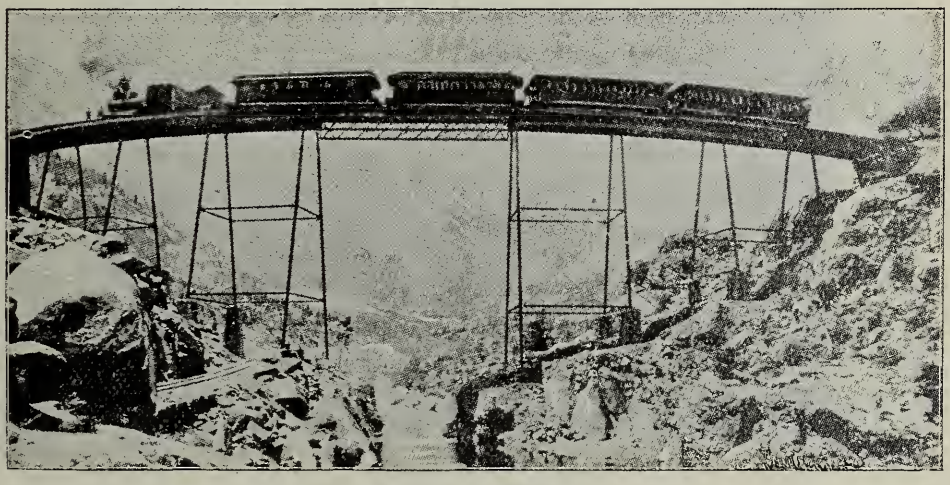


PIKE'S PEAK.

scale of architecture for all the principal buildings of the Exposition, which are ranged on either side of the Grand Canal.

Facing the Plaza, directly inside the main entrance, is the Fine Arts Building, in the shape of a parallelogram, the long axis being parallel to the Grand Canal. It is 246 feet long and 130 feet wide.

The Machinery and Electricity Building is located on the northeast corner of the Grand Court, being east of the Mine Building and across the lagoon from the Manufacturers' Building. There are triple entrances on the main floor level in the center of the main front, and similar groups in the centers of the east and west fronts, with four emergency exits in the north wall. The entire building will be a series of yellow and ivory tones, growing more intense as they reach the top, culminating in the



ACROSS THE GORGE—GRAND CAÑON.
D. & R. G. R. R., Colorado.

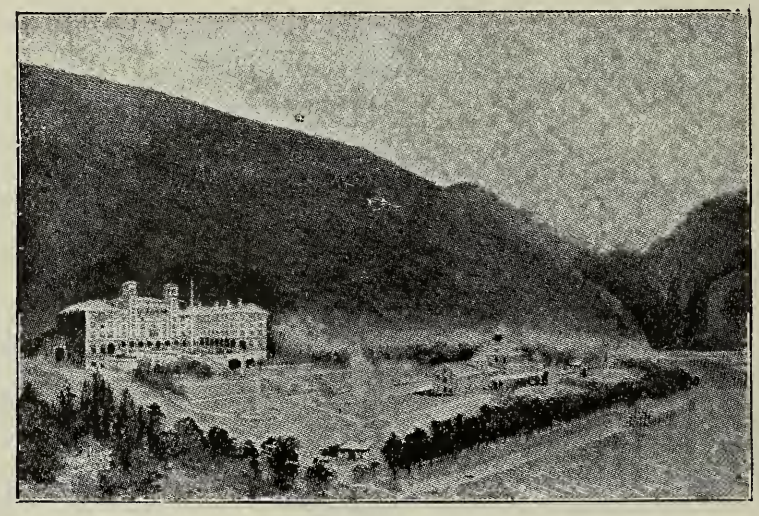
dull golden statuary full of primitive vigor which surmounts the building and symbolizes its use.

Train loads of building material of all kinds, machinery, and other supplies are daily unloaded on the grounds, convenient to the buildings. In every direction hundreds of mechanics and laborers are busily employed hastening the exposition work to completion.

One point to be noticed is the success of the designers in keeping free from the influence of other expositions. The plan of grounds, the grouping and design of buildings, the scheme of color, are all wholly different from any former achievement.

A visit to Omaha alone would fully repay one for the trip west.

Of the Colorado scenery volumes could be written; and here are reproduced a few cuts of choice bits. Of the resorts which are noted in this section none are more deserving of praise than Glenwood Springs, Colorado. It is in the very heart of the Rocky Mountains, readily accessible by rail from the East and West. Here one gets pure air, picturesque scenery, healthful surroundings, and the marvelous hot springs which have given the place its great fame. The elevation of the springs is 5,758



GLENWOOD SPRINGS.

feet, the same as Denver, and the town stands at the confluence of two mountain streams, the Roaring Fork and Grand River, and is about equi-distant from Denver and Salt Lake City. Near at hand is the remarkable cañon of the Grand River.

Arrangements will no doubt be made for every one to visit the place who is in attendance on the meeting.

Further information in regard to the QUARTERLY SPECIAL can be had by addressing the QUARTERLY SPECIAL, Box 434, Louisville, Ky. A complete itinerary will be mailed on application.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"ALIS VOLAT PROPRIIS."

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Original Contributions.

URETHRO-RECTAL FISTULA: A NEW OPERATION, WITH REPORT OF THREE SUCCESSFUL CASES.

BY JAMES P. TUTTLE, M. D.,

NEW YORK CITY, U. S. A.

The barrenness of medical literature upon the subject of urethro-rectal fistula is well shown in the following sentence in a letter from a prominent surgeon, written shortly after my first report upon this subject in December last. He says: "I find little in the books or journals upon this subject to enlighten, and less to encourage me in the treatment of this condition."

Van Buren and Keyes, Bumstead and Taylor, Otis, Finger, and Milton do not mention the subject, so far as I can find. Duplay has written more upon the subject than any other author. Theoretically he has covered the ground quite thoroughly, but his advices with regard to treatment have failed to stand the test of practical application. White and Martin, in their recent works on genito-urinary diseases, have discussed the subject and given two methods for operation which appear to be feasible, but neither author, so far as I can learn, has put them to a test. Sir Henry Thomson seems to have seen a number of cases, but frankly confesses that he has never cured any, save one, and that by posture in the act of urination. He has benefited other cases by operative and local treatment, as have other surgeons, but so far as I can find there are only six cases reported in medical

literature in which a chronic urethro-rectal fistula has been radically cured. Most of these successes have been obtained after two or more attempts.

The cases are no doubt rare, but not so much so as one would conclude from what is written on the subject. I have heard unofficially of no less than seven cases, only one of which had been cured, since reporting my first case. The condition consists in a fistulous tract between the urethra and the rectum.

The term urethro-rectal has been selected in preference to recto-urethral, because it expresses more nearly the nature of the disease, inasmuch as the condition generally originates in the urethra, and the urine escapes into the rectum much more frequently than do the intestinal contents into the urethra. This is not due to the course of the fistula, but to the size of the tract and the nature of the contents. Duplay says these fistulæ always run downward and backward from the urethra, a statement which is neither corroborated by any other author nor borne out by facts. In my second case it will be seen the fistula extended from the rectum downward and forward into the urethra. As the history would indicate, this particular fistula probably originated in the rectum, and this leads to the thought that the course of the tract may bear some relation to its origin. No observations have been made upon this point, however, and were it established, I do not think it would be of any practical value.

Classification and Pathology. Urethro-rectal fistulæ may be classified, according to their causes, into traumatic and pathological.

Traumatic. The most frequent cause of these is cutting or tearing into the rectum during operations upon the urethra, the prostate, or for stone. Fortunately, these cases generally heal simultaneously with the perineal wound, owing to the free drainage of urine from the deep urethra through the incisions in it, and it was this very fact which first led me to introduce this feature into the operation which I shall have the pleasure to present.

The forcible pushing of sounds through the urethral walls and into the rectum is also a cause of fistula between these two organs. In such cases it would be impossible for the tract to extend in any other general direction than upward and back-

ward from the urethra. It is not necessary for the sound to be passed completely through the rectal wall in order to produce a fistula of this nature. If it but tear the urethral wall and open a tract for extravasation of urine into the septum dividing the rectum and the urethra, the ulceration or abscess which follows will most likely break into the rectum as the point of least resistance compared with the dense tissues of the perineum.

In like manner internal urethrotomy or divulsion in the membranous or prostatic portion may result in urethro-rectal fistula through extravasation of urine and consequent abscess, especially if the incision should be made in the floor of the urethra.

The passage of foreign bodies, such as pins, needles, catheters, pipestems, or fish-bones from the rectum into the urethra, or *vice versa*, may also be classed among the traumatic causes of urethro-rectal fistula, although I am not aware of any authenticated case from such a source. Traumatisms of the perineum causing sloughs, impaling upon sharp instruments, the horn of a bull, for example, and too deep burning with the cautery in Van Buren's operation for prolapsus of the rectum, may all cause fistula between the rectum and urethra.

Pathological. Cancers of the rectum or prostate may, by their extension and sloughing, result in urethro-rectal fistulæ. This generally happens in the later stages of the disease, after operative procedure is inadmissible. In such cases only palliation can be attempted, and it is a question if any surgical interference is superior to the free use of morphine.

These cases generally resolve themselves into vesico-rectal fistulæ. Owing to a relaxed state of the vesical sphincter, incontinence supervenes and the victims are pitiable indeed. The pathology is not different from that of non-complicated cancer of the rectum and prostate, and need not be entered into here.

Ulceration of the rectum, either simple, tubercular, or syphilitic, may result in this form of fistula by direct extension or by the formation of a burrowing abscess which eventually breaks into the urethra. It is rarely, however, that these fistulæ originate on the rectum. Burrowing tracts, or blind internal fistulæ, as they are commonly called, generally tend toward a cutaneous surface either at the side of, posterior to, or at some point remote

from the rectum. When abscesses originating from the rectum occur between the levator ani and perineal fascia they may almost completely surround the urethra and yet not break into it, owing to the fact that its walls, lying in contact, present no cavity to be invaded, and the denseness of its tissues offers a greater resistance than the peri-urethral tissues. Such abscesses either open into the rectum or upon the surface. If they are incised early in their course they heal kindly without invading either of the organs here concerned. In tubercular ulceration of the rectum the prostate gland is almost always involved in the pathological process, and it is a question then, whether the disease extends from the rectum to the urethra, or from the latter to the former.

Diseases of the Urethra and Prostate, however, are the causes of a large majority of urethro-rectal fistulæ.

Stricture, with posterior ulceration, is perhaps the most frequent in its causation. The ulceration furnishes a gap for the leakage of urine, and the stricture, by obstruction to the flow, forces this fluid out into the peri-urethral tissues at each act of micturition. This urine decomposing, irritates the tissues, and pyogenic bacteria entering from the urethra produce suppuration and abscesses, which burrow in the direction of least resistance and consequently open frequently into the rectum, if indeed they are not incised or broken through by digital examination of this organ. Such abscesses have been opened through a perineal incision and then cut through into the rectum as for rectal fistula, the surgeon discovering later that it was of urinary origin and not at all connected with the posterior organ. It is a fatal mistake ever to cut into the rectum from an abscess involving the recto-urethral septum until a pathological opening into that organ has been clearly demonstrated. It is also a serious error to open any abscess anterior to the rectum through that organ. However deeply situated, it should be evacuated through perineal dissection, and thus avoid the dangers of urethro-rectal fistula and intractable rectal ulcer. The point of extravasation and consequently the urethral opening of these fistulæ may be anywhere between the compressor urethræ muscle and the neck of the bladder; it is generally in the prostatic portion, however, and on one side or the other of the veru montanum.

Abscesses of the prostate, whether simple, gonorrheal, or tubercular, may result in this form or fistula. The capsule of this gland will necessarily prevent much burrowing, and abscesses in this position will point directly backward toward the rectum. They break most frequently into the urethra, but even after this they may invade the intestinal canal through inflammation and sloughing of the posterior wall. If they open first, as they rarely do, into the rectum, urethro-rectal fistulæ will almost invariably result. The danger of opening such abscesses through the rectum, as is advised by some surgeons, is so apparent that it need not be discussed. The same remarks apply to these as have been made concerning urinary phlegmons. Sir Henry Thomson says that these prostatic abscesses are the most frequent cause of urethro-rectal fistulæ. Fourgue (White and Martin, 963) says that 43 in 67 cases of prostatic abscesses opened into the rectum, and in 21 of these pus was discharged by both rectum and urethra. If such be the case, it is surprising that we do not meet with urethro-rectal fistula much more frequently than we do. These abscesses may not only break into the two canals, but at the same time, to further complicate matters, there may be a perineal opening or tracts leading off to the ischio-rectal fossa and opening at points more or less remote upon the thigh or belly. In the list below, one such case is reported. White and Martin say: "The main tract, starting from a prostatic or peri-prostatic abscess cavity, has often many diverticula, forming blind, suppurating sinuses." Such sinuses might be very misleading to one not accustomed to deal with these conditions, and lead to operations which will do more harm than good. It will be well, therefore, to bear them in mind.

Calculi of the prostatic or membranous urethra, or those developing in the prostate gland itself, may be the exciting cause of recto-urethral fistula. In the first two varieties the fistula generally results from the wall of the urethra being cut through by the sharp projections of the calculus or ulcerated from pressure, the subsequent extravasation of urine proceeding as the active cause, just as in ulceration from stricture. In the latter variety the fistula may occur from the cutting into either or both canals by the calculus and the consequent suppuration therefrom. I have seen one case in which the stone had cut

through the urethra and was almost through the rectal wall. A timely operation through the perineum removed the calculus and averted an otherwise inevitable fistula.

Congenital urethro-rectal fistulæ have been observed a number of times. These, however, are not true fistulæ, but malformations, in which the opening into the urethra serves as an anal orifice, which is absent. They are due to the absorption of the recto-urethral instead of the recto-anal septum in fetal life. When the normal orifice is established, the urethral aperture will generally close.

Pathology. No extensive study has been made, so far as I am aware, of the pathological anatomy of urethro-rectal fistulæ. The malignant and tubercular cases have been carefully examined and their characteristic features determined; in those due to other causes, however, only the gross pathology and clinical symptoms have been thoroughly studied.

There are two distinct stages of the disease, viz., the acute or suppurating, the chronic or cicatricial.

In all urethro-rectal fistulæ arising from other causes than tuberculosis and malignant growths, suppuration is an important feature. So long as it continues, the extent and dimensions of the fistula can not be determined, and the necessity of surgical interference is always doubtful. The waste of tissue from suppuration may be enlarging the orifice all the time, or the granulation with a gradually decreasing discharge of pus may be slowly closing it, so that if nature is properly aided a cure will ultimately result. Where the fistulous tract is short, as between the rectum and membranous urethra, where the septum is very thin, the suppurative period is very brief. The tissues here are dense and closely matted together, and as a consequence abscesses, phlegmons, or severe inflammations at this point soon break through into both cavities. The tissues separating the mucous membranes of the two canals here being so thin, it takes only a short time for their edges to come together, leaving the fistula bound all around by a mucous surface and bereft of all possibility of healing, except by surgical interference. It also follows that in these parts, the tissues being so thin, a larger area of surface membrane in each cavity will be affected by the sloughing process, and consequently the opening will be so much the larger.

We may therefore call attention to the fact that fistulæ in this region are larger, shorter, more direct, have less cicatricial tissue, and become more quickly chronic than those in the prostatic portion. There is also less cicatricial tissue in and about these fistulæ. Indeed, they generally consist of a sort of window between the rectum and the urethra, cut through a septum with edges as thin as paper. There appears to be a simple loss of tissue in the urethral floor and anterior wall of the rectum, the edges of which nature has bound with mucous membrane to avoid irritation and suppuration. This description does not apply to the condition after repeated cauterizations, irritation, and attempts at surgical interference.

When the opening is in the prostatic urethra the fistulous tract is narrow and tortuous, more apt to continue suppurating, and may have numerous diverticula, some of which open through the skin of the perineum, perirectal area, or even on the abdomen. When the disease is due to tuberculosis, these fistulous tracts undermine the edges of the mucous membrane and burrow beneath it in different directions. They are filled with a fungous, gellatinous granulation, and discharge a serous pus, and the skin surface through which they open presents a characteristic purplish tint. If the fistula is due to calculus, the stone, if it has not escaped, can be felt by the aid of a probe through the rectal opening, or with a sound in the urethra and the forefinger in the rectum it can be pressed up against the steel instrument and thus elicited. If the stone has escaped, there is left an irregular cavity with smooth walls, sometimes coated with phosphatic or uric-acid deposits, and having small openings in both the intestinal and urinary tracts. I have not seen or read of any burrowing diverticula in these cases.

When the fistula is produced by simple abscess of the prostatic gland, there exists at first a cavity of more or less extent, connecting with the rectum and urethra by small openings. This cavity is generally limited by the capsule of the gland, and consequently there are rarely any burrowing tracts or external openings. The cavity grows gradually less, and finally resolves itself into a fistulous tract between the urethra and rectum, widest in its central portion, lined with the so-called pyogenic membrane, and surrounded by more or less cicatricial connective

tissue. The thorough removal of all such tissues in operating for fistulæ is of the highest importance.

Diagnosis. The characteristic symptoms of urethro-rectal fistulæ are the passage of urine into the rectum during micturition and of gas and intestinal contents through the urethra during defecation. The abnormal passage of material takes place during the functional activity of the organ from which it comes. The amount of such material passed will depend upon the size of the opening and the obstruction to its flow through the natural channel. A tight stricture of the urethra causes an excessive flow of urine into the rectum, and a spasmodic sphincter ani causes an increased amount of intestinal contents to be passed into the urethra. The passage of fecal matter into the urethra, however, is very much less frequent than that of urine into the rectum. This is owing, first, to the prevailing course of such fistulæ being downward and backward from the urethra; second, to the size of the orifice being generally too small to admit any but liquid material, and third, to the fact that the sphincters are not often so contracted as to produce much obstruction to fluid or semi-fluid intestinal contents. Sometimes, however, gas and fecal matter are forced into the urethra, and even solid masses have been known to obstruct its channel and finally be passed through the meatus after much straining and pain. Such instances must occur in cases with large rectal openings, and although I have no proof to offer, I am convinced that they are always where the fistula is between the rectum and membranous urethra. Gas is passed through the urethra much more frequently than fecal matter, and this may even occur between the acts of defecation.

The urine passes into the rectum only at or immediately after urination. It is generally expelled at once, as the rectum is exceedingly intolerant of this secretion, even more so than the urethra is of fecal matter. Rarely, however, is it retained for some time, and only passed at the next act of defecation. In such cases it is difficult to differentiate between vesico-rectal and urethro-rectal fistula. After urethro-rectal fistula has existed for some time, ulceration of the rectal mucous membrane from irritation by the urine almost always supervenes. The discharge of pus from this may lead one to suppose that the fistula is still

in the suppurating stage. The seminal fluid may escape through the fistula into the rectum or not, as has been reported by Berard, according to the size of the urethral opening and its location, whether behind or in front of the ejaculatory ducts.

The physical evidences, as elicited by touch and sight, are after all the positive proofs of urethro-rectal fistula. If the opening is large, the tip of the forefinger can be passed into it through the rectum, and a sound introduced through the urethra can be easily felt. If the opening is small, the fistula can still be made out by digital examination through the mass of cicatricial connective tissue surrounding it, the elevated, pouting orifice, and the ridge-like tract of the fistula leading up to the urethral orifice. By the aid of a fenestrated or duck-bill speculum the orifice can be brought into view and a bent probe passed into it. When the tract is not too tortuous the probe can be passed entirely through it and brought into contact with a sound in the urethra. Sometimes the orifice is hidden in the folds of the rectum and very difficult to find. In such cases the laryngeal or dental mirror will be of good service, as I have found it to be in searching for the openings in blind, internal fistulæ.

The practice of injecting colored fluids into the urethra and rectum as a diagnostic test appears to me unreliable and without value except in differentiation between this and vesico-rectal fistula. This, in fact, is the only condition with which urethro-rectal fistula is likely to be confounded. We may, therefore, state in a very few words their characteristic features, and thus differentiate them :

Urethro-Rectal Fistula.	Vesico-Rectal Fistula.
Rarely congenital.	Generally congenital.
History of urethral or prostatic disease.	History of peritonitis or intestinal disease.
Contents pass from one channel to the other only during functional action.	Contents pass abnormally without regard to functional action.
Amount of material passed is small and irregular.	Amount of material passed is large and constant.
Cystitis and frequent micturition rare.	Cystitis and frequent micturition without exception.
Opening in rectum generally low down.	Rectal opening generally well up cavity.

Sound in urethra can be felt by probe or finger in rectum.
Colored fluids injected into bladder do not appear in rectum until micturition takes place.
Deposit of cicatricial connective tissue is generally large and easily felt with finger in rectum.
Fistulous opening in rectum generally small, and the tract can be made out by rectal touch.

Sound in urethra can not be felt through rectum.
Colored fluids appear in rectum immediately after injection into bladder.
Deposit of cicatricial connective tissue generally small and above the reach of the finger.
Opening in rectum generally large, and no tract can be felt.

Treatment. The treatment of urethro-rectal fistula has been as various as it has been unsuccessful. Few authors indeed have had the temerity to advise any methods as sure, the most being content with suggesting palliative remedies and possible surgical procedures with which they have had no experience, and in which they have little confidence.

Duplay (Am. Encycl. Surger., VI, p. 507) says: "While traumatic fistulæ, those which follow acute and tolerably circumscribed abscesses, present a good prospect of recovery, fistulæ which follow in the train of diffuse and extensive suppuration, either idiopathic or of a tubercular nature, and which are accompanied by prostatic sinuses, are almost always incurable. Finally, if there be some examples of spontaneous recovery of urethro-rectal fistulæ, it must be acknowledged that most frequently they last indefinitely, and we shall soon see that the chances of cure by surgical interference are extremely few." And again he says (Traite de path. Extern, t. VII, p. 180): "On the whole, if we had any examples of spontaneous cure of urethro-rectal fistula, we might counsel that it is best to wait, as the chances of cure by surgical interference are very slight."

Sir Henry Thomson, after curing one case by causing the patient to lie on his stomach while urinating, tried it on several others and failed. He concludes, from an enormous experience, that such fistulæ are always a serious matter, requiring all the skill of the surgeon and patience of the patient; that surgical intervention is rarely of great benefit, and that constant catheterization offers the best prospect of cure. He advises the use of the galvano-cautery, as he has benefited some cases with it, but frankly says he has never cured one. Taylor says, in the last edition of his work, that such fistulæ occur from prostatic ab-

scess and are most difficult to cure, but suggests no treatment whatever. Morris (Treves Syst. of Surgery, II, p. 898) advises catheterization combined with slitting open and scraping the tract when "hard and callous," but does not state whether he cuts through the perineum to do this or not. He does not report any cases as cured, but says he has benefited one case by suprapubic cystotomy after the other method had failed.

The principles underlying the successful treatment of these fistulæ may be briefly stated, and differ very little from those laid down by Duplay:

1. Remove all obstruction to passage of urine or intestinal contents through their normal channels. This involves the treatment or removal of rectal or urethral stricture, polypi, or other tumors, and the overcoming of sphincteric spasm and obstruction at the anus. We can not enter into the discussion of methods for accomplishing these ends at the present time further than to say that the effects of stretching the sphincter ani are too transient to be of much benefit. Only thorough division with the knife or cautery is likely to be effectual. This method was advocated by Desault years ago, but it generally fails unless supplemented by other measures.

2. Protect the parts from the abnormal passage of urine or fecal matter and gas. Permanent or periodic catheterization will accomplish this so far as the urine is concerned, but as to the gas and fecal matter it is much more difficult. Esophageal tubes, canulas with aprons attached and introduced into the rectum, packing of the anterior rectum and fistulous opening with gauze, and many other means have been tried for this, all with but little success. Constipating the bowels and allowing them to move only once in four or five days is perhaps next best to the diversion of the fecal current through an inguinal anus. This last procedure has hitherto been considered too formidable a measure to be advised except as a *dernier ressort*, but since the advent of aseptic surgery and the demonstration of the fact that these temporary artificial ani can be safely and permanently closed, the operation would be entirely justifiable where other methods have failed. As will be observed, I did this method in my third case, not for the cure of the fistula, however, but with the view of curing the severe rectal ulceration.

3. The therapeutic and surgical treatment of the fistulous tract itself:

The application of stimulating or cauterizing agents, such as nitrate of silver, chloride of zinc, caustic potash, or iodine, is among the first methods to be adopted, and should be patiently tried before resorting to more radical measures—but in conjunction with catheterization as advised above. The galvano-cautery, as advocated by Sir Henry Thomson and M. Dentu, may take the place of the therapeutic remedies, although I do not know of any case having been cured through its use. Ziembieki wisely says, concerning this method, that "the fistula must be very small and entirely surrounded by mucous tissue (in other words, that there should be little or no cicatricial tissue). If the fistula is large and surrounded by cicatricial tissue, this treatment will be unsuccessful and leave the orifice larger than before."

The surgical procedures by which it has been attempted to cure urethro-rectal fistula are very numerous. Laying open the tract into both channels through the perineum, scraping out the fungous granulations, and leaving the wound to heal by cicatrization has been done a number of times with one reported success. Converting the condition into two fistulæ, rectal and urethral, by perineal section and treating the rectal portion by an elastic ligature has been advocated and seems plausible, but no cases have been reported as cured by this method.

Sir Astley Cooper advised introducing a sound into the bladder, and with this and the forefinger of the left hand in the rectum for guides, to split the recto-urethral septum well above the fistulous tract, thus cutting the latter in two; then pack the wound, and afterward allow the urine to flow through the perineal opening. He succeeded in curing one case by this method, I believe, but others have not been so successful.

The operation generally advised is some modification of the Sims operation for vesico-vaginal fistula, and consists in freshening the edges of the fistulous opening and sewing them together with silkworm gut or silver wire sutures. This method has been effectual in a few cases, but all operators agree with Moorhof, who says: "The operation here presents more difficulties and is much more rarely successful than is vesico-vaginal fistula." It

has been clearly shown that the passage of healthy urine over a sutured wound does not interfere with healing. We must seek for some other cause, therefore, to explain the numerous failures by the suturing method. When the urine collects in a pocket, it soon decomposes, pyogenic bacteria develop, and any healing process in the part will be soon arrested. This phenomenon and the fact that simple suturing of the rectal opening always leaves such a pocket easily accounts for the wounds not healing. Especially is this true when the fistulous tract is long, narrow, and tortuous, in which event it would be only partially obliterated, and the collection of urine in the remaining portion will soon produce inflammation and sloughing in the wound. In order that suturing may succeed, there must be no possibility of the retention and decomposition of urine behind or over it. The prevention of this has been the secret of success in the cases which I shall report.

The method practiced by Dr. Wyeth in the case which I shall quote later has the disadvantage of leaving a marked pocket in the urethra and a raw surface in the rectum. It consists in freshening the edges of the fistulous opening in the rectum, then dissecting up two flaps of mucous membrane from the rectal wall, which are left attached at the margin of the fistula; these flaps are turned over so that the epithelial surface forms the urethral wall, and are sutured in this position with silkworm gut. My friend, Dr. Alexander, mentioned a case in which he had obtained a cure by a method similar to this after a number of attempts, but from his description I should judge he used a method more similar to the Diffenbach operation for fistula in the pendulous urethra.

All such procedures, however, are surface operations, and only applicable to fistulæ of no depth—those in the membranous urethra generally. Where the urethro-rectal septum is at all thick, where there is much cicatricial tissue, or where the fistulous tract is over one fourth inch in depth, we should invariably expect failure by this method. The whole pathological tract must be obliterated before we can hope for a cure. Failure in this is more often the cause of failure than is infection.

Maydl resorted to suprapubic cystotomy as a preliminary operation to suturing a urethro-rectal fistula. The result, how-

ever, does not seem to have been satisfactory, as his patient left the hospital only "gebessert" (improved).

White and Martin recommend an operation similar to that of Sir Astley Cooper, but say further on: "A more radical method and one giving better prospect of success is thus conducted: A curved incision is made across the perineum in front of the anus, this orifice lying in the concavity of the curve. This incision, identical with that employed for exposing the seminal vesicles, is deepened until the rectal and urethral orifices of the fistula are exposed and made accessible. In this dissection, . . . the two orifices having been exposed, and the main tract and its diverticula having been opened, thoroughly curetted and cleaned, the edges of the fistulous opening are extensively denuded and closed by catgut sutures introduced as in the closing of vesico-vaginal fistula. When the tract is small and fairly direct, and the surrounding tissues healthy, the perineal wound may be closed by buried catgut sutures. When there have been much infiltration and suppuration, the wound should be packed and allowed to heal from the bottom." They do not cite a single case, however, as having been cured by either method.

In 1889 Ziembieki applied a new principle to the cure of urethro-rectal fistula, which, theoretically, perhaps, is the best operation yet devised. It consists in destroying the parallelism or apposition of the rectal and urethral orifices, so that failure of one to unite would not involve the other. To accomplish this he dissected the rectum from all its attachments up to a point above the fistulous orifice, just as for perineal excision; he then freshened the edges and sewed up the openings in both rectum and urethra. Finally he rotated the free end of the rectum on its axis until the fistulous point was brought well off to the side and thus out of line with that in the urethra, and sutured it in that position by stitches through the anal margin; a tube for the escape of gas was introduced and the rectum packed with gauze in order to hold the walls in apposition with the surrounding tissues. Primary union took place in the rectum, but the sutures in the urethra gave way on the seventh day, leaving a small perineal fistula; this, however, healed in a short time, and the patient went home at the end of six weeks perfectly well. Dr. Fuller has recently reported an almost identical operation

done independently in 1896 with a similar result, so far as the rectum is concerned, but there still remains a small perineal fistula after seven months, probably due to a mistake in the after-treatment. This operation all will see is long, bloody, and formidable, especially for weak and exhausted subjects. It is less difficult to perform, however, than most other plastic operations for this disease, as the space for operating is greatly increased by the dissection.

Up to 1896 I had seen but two instances of this disorder, each in the charge of other surgeons. Both of these cases were failures so far as cure was concerned, though treated and operated on most skillfully. My observation and reading, however, showed me that it was always the urethral side which gave way first and infected the rest of the wound. I reasoned that if all possibility of the retention of urine in the urethra and its subsequent leakage could be prevented, the question of curing these fistulæ would be solved. I therefore welcomed an opportunity to put my theory to the test when a case was brought to me by my esteemed friend and confrére, Dr. J. A. Bodine, of New York City. The fistula opened into the rectum about half an inch above the external sphincter, and was large enough to admit easily the end of my index finger. The floor of the urethra was thus absent to a considerable extent, and required to be rebuilt. There was considerable though not excessive cicatricial connective tissue deposit about the opening and a stricture of the membranous urethra anterior to the fistulous opening. After several days' preparation and treatment to sterilize the urinary and intestinal secretions, I operated on August 30, 1896, as follows: The sphincter was thoroughly incised and all the cicatricial tissue cut away with scissors, thus freshening the edges of the fistula at both ends. The intestinal wall was then dissected from its anterior attachments up to a point three fourths of an inch above the fistula and half an inch to each side. The stricture of the urethra was then operated on by perineal section, the incision being carried backward into the fistulous opening. A flap was then dissected from the soft tissues at either side of the urethra large enough to replace that portion of the floor which had been destroyed. These were sewed together with catgut sutures over a full-size sound and introduced through the meatus

in order that the caliber of the canal might be accurately re-established and no pocket left. The fistula being thus closed, the sound was withdrawn and the fresh perineal wound and anterior incision in the urethra left unsutured. The edges of the intestine were then sewed together with chromicized catgut, and the rectum packed with iodoform gauze, a drainage-tube having been introduced for the escape of gas. A soft catheter, No. 12 F., was introduced into the bladder through the meatus and fastened there. The perineal incision was loosely packed with absorbent gauze and dressed with an ordinary T bandage. As the catheter seemed to cause no inconvenience, it was left in for eighteen days, the bladder and perineal wound being irrigated daily with Theirsch's solution. Convalescence was uneventful, the perineal wound healing in about six weeks, and the patient left the hospital December 1, 1896, perfectly well. He was detained there longer than was apparently necessary on account of a slight urethral discharge due to unavoidable granulations in the operative field, and in order to continue the passage of sounds for the cure of his stricture.

My second case was not a typical one, but it involved the same principles of treatment. The third, however, was a typical one of long standing, with much induration and with serious complications in the shape of rectal ulceration and stricture, although the floor of the urethra was not destroyed to any considerable extent. This patient still suffers from a slight ulceration of the posterior wall of the rectum, where the stricture of that organ was cut, but he is entirely well of his urethro-rectal fistula. Both cases were presented to the section of Genito-Urinary Surgery of the New York Academy of Medicine, February, 1897, and discussed by that body. I have recently seen them and verified the cure.

Let us review briefly the cases of this disorder thus far reported, drawing our conclusions:

1. Dr. Case. (*N. Y. Med. Chirurg. Bull.*, 1831–2, p. 77.) M. 40. Presented two external fistulous openings, each of which connected with both rectum and urethra. The fistulæ were due to abscess of the prostate following stricture of the urethra. All the fistulous tracts were laid open, and external urethrotomy was performed for the stricture. The wounds all healed by granulation, and the patient recovered.

2. Nott and Emmett. (*N. Y. Med. Journ.*, 1870.) M. 32. Urethro-rectal fistula in membranous portion, due to operations for stone. Edges pared and sewed up with silver wire sutures, as in operations for vesico-vaginal fistula. Recovery.

3. Erichsen. (*London Lancet*, 1857, II, 247.) M. 22. Urethro-recto-perineal fistula, due to abscess of prostate. Does not state what this abscess was due to, or whether there was stricture of the urethra or not. Operated by laying open and scraping all fistulous tracts. Patient appeared to be doing well, but the fistula was not healed when case was reported.

4. E. J. Birmingham. (*N. Y. Med. Jour.*, 1876, 9, 113.) M. 24. Urethro-rectal fistula, due to abscess of the prostate five weeks after acute gonorrhea. Feces passed into the urethra, but no urine into the rectum. Treated by the introduction of sounds into the urethra, and application of nitrate of silver to the fistulous opening. Recovery.

5. M. Fleury (*Bull. et Mem. d. l. Soc. et Chir. d. Paris*, 1876, p. 50) reports two cases urethro-rectal fistula in tuberculous subjects, and considers this condition a pathognomonic evidence of pulmonary tuberculosis. The fistulæ, he says positively, were not due to gonorrhea, stricture, or traumatism. Treated by local applications. Patients both died of pulmonary phthisis, the fistulæ still persisting.

6. Sir Henry Thomson (*Diseases of the Urinary Organs*, 1882, p. 66) reports case of urethro-rectal fistula, due to patient's thrusting bougie through the urethra into the rectum. He succeeded in curing the case by causing him to lie on his belly while urinating. No other treatment is mentioned.

7. Jones and Eaton. (*Am. Jour. Medical Science*, 1877, p. 102.) M. 36. Had no venereal history, but suffered from "hemorrhoids, stricture of urethra, stricture of rectum, and recto-urethro-perineal fistula." The urethral fistula they say was due to spontaneous rupture while lifting a heavy weight. They first did external urethrotomy; afterward applied ligature to rectal fistula and did partial proctotomy for the stricture. Case said to have been cured, but the whole history is so improbable that I only accept it *cum grano salis*.

8. E. Frankel (*N. Y. Med. Record*, 1876, XI, 231) reports case of M. 40. History of gonorrhea, urethral stricture, and

forcible thrusting of sound through the urethra into the rectum. Perineal section and cauterization failed to cure the fistula, and it was sewed up eight months later by the Sims method, silver sutures being used. Recovery.

9. Peraire (*France Medicale*, 1883, t. 515) reports case of M. 29. History of having had gonorrhea three times, together with urethral stricture. Developed urethro-rectal fistula without marked abscess. Died from chronic nephritis, the fistula still persisting.

10. Civiale (*Traite des Malad. d. voies urinaire*) reports two cases, one of which was cured by the "sonde a demeure," but the other resisted all efforts to close it.

11. E. Schwartz (*L'Union Med.*, 1874, p. 2) reported case of M. 22. History of venereal disease followed by abscess of the prostate, from which there resulted urethro-rectal fistula. Schwartz said the patient was cured by the "sonde a demeure" and cauterization, but Devin (*Thesis*, p. 27) says he saw this case a short time afterward and demonstrated beyond doubt that the fistula still existed.

12. Allen (*Austral. Med. Jour.*, Melbourne, 1883, p. 306) showed specimen of tubercular prostate and bladder with urethro-rectal fistula. The patient gave a history of prostatic abscess and rupture into the rectum, with subsequent passage of urine through the opening. The patient suffered from general tuberculosis, and died without any relief to the fistula.

13. Menocal (*Rev. d. Med. y cir. pract.*, 1889, p. 306) reports case of boy six months old with imperforate anus, and who passed gas and fecal matter through his urethra. By establishing a normal anus and freshening and stitching up the aperture between the rectum and urethra, he obtained a perfect cure. (*Schmitt's Jahrbush*, 1890, p. 66.)

14. Wyeth (*CanadaLancet*, 1887-88, p. 321) reports case of urethro-rectal fistula due to formation of calculus around a small piece of drainage-tube left in an old perineal fistula following lithotomy. Rectal orifice was three-fourths inch long and one-fourth inch wide. It was situated one inch above anal aperture. It was closed with silkworm gut sutures after the method already described as Dr. Wyeth's. The patient returned one year later with irritation of the rectum, and complaining that he

still occasionally passed a few drops of urine into his rectum. Three of the stitches still remained in the rectal wall. They were removed, and careful searching with the probe failed to show any fistulous opening. Dr. Wyeth fails to state whether the removal of the stitches relieved the patient's symptoms, and we must put this case down as only a probable cure.

15. Maydl (*A. Eder-Artzl. Berichte,* 1888-89, p. 75) reports case of M. 24, who had suffered from urethral discharge for one year. He then developed an abscess, where, Maydl does not say, but it opened into the rectum and urethra, and for nine months urine had passed from this organ in gradually increasing quantities. After unsuccessful attempts to close the fistula by cauterization and operation, he resorted to suprapubic cystotomy, followed by suturing of the fistula. The patient was improved but not cured.

16. D. Antona (*Riv. Clin. d. Univers. di Napoli,* 1889, p. 19) reports case of boy fifteen years old with stricture and urethro-rectal fistula resulting from lithotomy. After thoroughly dilating the stricture he dissected the anterior wall of the rectum from the urethra; sewed up the fistulous opening in the former and left that in the urethra to heal by granulation. This case appears to have recovered.

17. Ziembieki (*Cong. Franc. d. Chir. Proc. Verb.,* etc., 1889, Par. 1890, IV, 295) reports case of urethro-rectal fistula caused by man being thrown on rod of iron. After having tried at separate times "cauterization, section of sphincters, the Cooper and American methods" in all five operations with five failures, he practiced the operation of torsion as described above. This resulted in a perfect cure.

18. Fuller (*Jour. Cutan. and Genito-Urinary Dis.*, N. Y., April, 1897) reports case of urethro-rectal fistula in which he performed an operation similar to that of Ziembieki. This patient was much improved but not well at the time of the report.

19. Devin (*Thesis,* Paris, 1875) reports case operated upon by Duplay as many as five times, besides cauterization. The operation consisted in efforts to close the upper part of the fistula at each sitting by plastic method, and thus gradually reduce the opening until perfect closure would be obtained. It was suc-

cessful in reducing the size of the aperture, but the patient was not cured, as at the time of the report the patient was still passing urine through the rectum.

20. Pingaud (*Devin's Thesis*) operated on case of urethro-rectal fistula following peri-prostatic abscess by Sims' method in 1884. Temporary relief was obtained, but after a short time the fistula recurred, and at last report the surgeon was contemplating further operative efforts at closing it.

21. Boyer (*Malad. Chirur.*, t. VII, 5th ed., p. 193) has reported one case of urethro-rectal fistula following prostatic abscess which he succeeded in curing by cauterization with nitrate of silver and the actual cautery. He reports two other cases produced by thrusting sounds through the rectum, and goes on to state that he considers the disease generally incurable.

22. Pichet (*Devin's Thesis*) reports case due to gonorrheal abscess in which he failed to obtain cure either by operative or palliative treatment.

In addition to the above, I have the honor to report three cases, two of them typical, in which the suturing operation with perineal drainage, as I have described before, has proved completely successful:

23. F. 28. Urethro-rectal fistula following urinary abscess; stricture of the membranous urethra. Fistula had existed about two months, and was three fourths of an inch long by one fourth of an inch wide, beginning one-half inch above anus. August 29, 1896, plastic operation was done to restore floor of urethra, and the rectal opening was closed by chromicized catgut sutures. The ends of external sphincter were not reunited. External urethrotomy was done for the stricture, the incision in the urethra being carried backward into the fistulous opening. The perineal portion of this wound was left open for drainage, and a permanent catheter was introduced. Convalescence uneventful. No urine passed into the rectum after the operation. Perineal fistula closed in about six weeks. Patient was seen April 10, 1897, and remained perfectly cured.

24. Mr. L., 40, presented himself at my office September 9, 1896, with history of fistula in ano which had been operated on seven or eight times, but in vain. The original abscess was due to fall on pommel of bicycle saddle. The fistulous tract had been opened

into the rectum, and presented a granulating wound extending up that organ to the extent of about one inch. There was one tract burrowing around the right side of the anus, and another running forward in the perineum, close to the urethra. The wound in the rectum and the tract to the side of the anus were dissected out and sutured. The perineal tract was laid open, scraped, and packed on September 11, 1896. One week later the sutured wounds had healed perfectly, but it was found with a very fine probe that the bottom of the perineal tract had not been reached. By the aid of cocaine this was traced forward almost to the scrotum and to the very wall of the urethra, where a small abscess cavity was found. Close questioning at this time brought out the fact that the patient early in his disease had passed gas through his urethra, but no urine through the rectum. Examination also showed a slight stricture of the membranous urethra, but no opening into the canal was found at the time. The wound was scraped and cauterized, the stricture dilated, and at the end of six weeks the patient left the city well. While this was not a typical case, I have no doubt in my own mind that it was originally a urethro-rectal fistula.

25. Mr. W., 40. Entered Polyclinic Hospital November 11, 1896. Gave history of long-standing fistula in ano and rectal ulceration which had been operated on three times, cauterized times without number. He thought the ulceration existed first, for one year previous he had suffered greatly from the passage of urine into the rectum at every act of micturition. Examination under chloroform showed stricture of the rectum, with severe ulceration of that organ; a large mass of cicatricial connective tissue connecting the urethra with the anterior wall of the rectum and through this a small, tortuous, fistulous tract running downward and forward from the rectum, through which only the finest probe could be introduced. The probe could not be brought into contact with a sound in the urethra. On account of the rectal ulceration and stricture it was decided to divert the fecal current before attempting to cure the fistula, and accordingly left inguinal colostomy was performed on November 14, 1896. At the same time posterior proctotomy was done and the fistula scraped, hoping possibly by these means to obtain healing by granulation. On December 3d, as there appeared to be no dimi-

nution of the flow of urine into the rectum, a plastic operation was done, similar to that in my first case for the closure of the fistula. There was much more cicatricial tissue in this case, and the rectal opening of the fistula was further removed from the anus and more difficult to reach. This patient's urethra would not tolerate the permanent catheter, and therefore he began to pass his urine through the perineal wound on the third day. The wound in the urethra closed in three weeks, however, and since then his urination has been perfectly normal. Owing to the burning of the Polyclinic Hospital on December 25th, the patient was transferred to my service in the Alms House Hospital, where I closed the artificial anus on January 23, 1897. I saw him April 1st, and with the exception of a slight ulceration of the rectum posteriorly and a very small granulating spot on the perineum, he was perfectly well. He passes all his urine through the meatus, and but for the slight rectal discharge would not know he had any thing the matter with him.

Of the twenty-five cases thus reported, eight have been cured by operative and four by palliative methods. These four were all comparatively acute cases; no chronic cases have been cured by medication, stimulation, or cauterization, and we may fairly conclude that patients can expect little from this mode of treatment. Surgical authorities give us very little more encouragement from operative procedures. While it is recognized that the cases above were nearly all reported as comparatively successful, and that the percentage of cures would fall far below the thirty-three per cent. shown here, nevertheless they do show that recovery is possible, and that the victims of this disease should not be consigned to their fate. Finally, notwithstanding the number is very small, three consecutive successes by one operator would seem to show that there was something more than good fortune in his method, and encourage us to offer a more favorable prognosis in these distressing cases than we have done heretofore.

HEMORRHOIDS.*

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Hemorrhoids arise from serial congestions and inflammations of the ano-rectal tissues. For convenience of discussion, I shall speak of them as internal and external varieties. Various terms are applied to designate the pathology, but hemorrhoids and piles seem to occupy the first place in nomenclature. Hematoma of the rectum would more nearly describe the pathological condition, in that it is a vascular growth, supplemented with interstitial changes forming a real tumor.

The term pile is derived from pila (a ball), while that of hemorrhoids is from two Greek words αἷμα (blood) and ῥέειν (to flow), literally flowing with blood, neither term being fully significant of the real lesion. Their recognition is easy, but their significance etiologically far-reaching. To diagnosticate rectal varices requires very little effort, but to determine the predisposing and exciting causes will require very thorough investigation.

Perhaps no other ailment confronts the general practitioner so frequently, and yet for which he does so little, as that of hemorrhoids. It is also a fact that few persons attain the age of sixty years without in some way having suffered from this disease. Sex offers no immunity, and it invades alike the palace and the cottage. In most cases no examination will be made, the diagnosis being furnished by the patient, he in the same breath suggesting a certain line of therapeutics. The idea is prevalent among the laity that any thing the matter with the rectum can be nothing else than piles, whereas an examination often reveals other lesions.

As a rule hemorrhoids *per se* are not painful, but complicated with fissure, fistula, erosions, etc., pain is the factor that induces the patient to seek his doctor.

Anatomical Considerations. In order to have a clear conception of the nature and location of hemorrhoids and the symp-

* Read before the Allegheny County Medical Society.

toms they produce, also to guide us in surgical measures, I shall direct your attention to some points in the anatomy of the rectum. It is not my purpose to weary you with anatomical detail already familiar to you, but rather to limit my remarks to the more salient features of structural elements in the hemorrhoidal area. This region includes important factors, being the seat of various diseases and reflexes.

Viewed through the speculum, you will notice elevations and depressions in a normal rectum, which serve a definite purpose. The hemorrhoidal "inch" is the lower segment of the gut, and is bounded internally by the ampulla or pouch, and externally by the skin. It is lined by mucosa, whose peculiar structure constitutes it a tactile organ, endowed with a special sense, warning a healthy person of the presence and movement of the fecal mass. The reflex power of the nerves over the sphincters so control the latter that they resist the unexpected escape of contents without constant cerebration. At the base of the columns of Morgagni are about ten small papillæ, each containing an artery and a nerve, the latter derived from a ganglionic enlargement beneath, a process of the plexus of Meissner. These papillæ are important in that they appear to be the source of the special rectal sense. Unfortunately they are considered pathologic by many surgeons, and are held responsible for many reflex phenomena connected with the digestive system. The anal orifice, guarded by the ectal and ental sphincters, is the terminus of the gut, and its tendency is to remain closed without volition. Dr. Stroud, of Cornell University, has clearly demonstrated that this power is resident in the peculiar nerve structure and supply which is central in the ganglion of Impar, and peripheral under the epithelium at the anal orifice. He further demonstrates that the narrow zone between skin and mucosa consists of stratified epithelium mounted on a scalloped margin known as the pecten (comb like). The mucosa is thrown into folds or columns by the action of the sphincters, which can not be entirely obliterated by divulsion. These are called the columns of Morgagni, and the space and pockets between the sacculi horneri.

The pecten containing the special rectal sense forms the floor of the ampulla when the organ is in repose, and appears vertically and directly in apposition to the approaching fecal mass. These

are supposed to be the sense organs to control the actions of the sphincter muscles. The pecten is limited above by corresponding digitations of mucosa known as *linea dentata*, and below by Hilton's white line or junction of the ental and ectal sphincters. It is richly supplied with nerve endings from Meissner's plexus, located in the submucosa and belonging to the sympathetic system—and also terminal branches from the pudic nerve. A tear occurring in this tissue by the passage of feces becomes very painful. I have thus described this important region to show subsequently how the integrity of the organ may be impaired by the development of hemorrhoids as well as by certain operations for their removal.

Having observed briefly the general structure and innervation, it is now proper to notice the blood supply of the organ directly concerned in the formation of piles.

The rectal arteries, superior, middle, and inferior, pass parallel to one another toward the anus and freely communicate by large transverse branches. The veins are similarly arranged and establish the hemorrhoidal venous plexus beneath the rectal sense organ, and extending upward for about two inches. As varicose veins occur in the extremities, so they are found in the rectum, but much more frequently in the latter, and for anatomical reasons. The veins of the extremities are tributaries to the general venous system only, while rectal veins contribute to both general and portal systems, the latter through the inferior mesenteric vein without valves, and the radicles passing through the muscular coats of the bowel at right angles, thus predisposing the hemorrhoidal venous plexus to engorgement. The vascular walls thicken by inflammatory processes with partial or complete segmentation from the plexus, and the pile is formed, obtunding the rectal sense organ, thereby predisposing to constipation.

Etiology. 1. From the foregoing, hepatic derangements obviously occupy a prominent place in the list of alleged causes of this disease. It is well known that torpid liver tends to obstruct the portal circulation and "back water" the column of blood into the venous radicles, which suffer most; constipation follows, and, further complicating the damaged structures and enervating the fecal reservoir, constitutes itself a real disease.

This leads to the use of purgative medicines. Doctors too freely resort to active cathartic remedies for the relief of constipation, when they well know that the subsequent congestion is exaggerated, the very thing they wish to avoid.

2. Certain cases of piles appear to develop and are maintained by the ingestion of certain foods—perhaps due secondarily to rapid and imperfect mastication and insalivation, usually the starting point of hepatic derangement and malassimilation.

3. Pregnancy and the usual mode of dress adopted by women contribute no little toward the pathology.

4. *The Bicycle.* I do not wish to condemn the use of this machine in a general way, but I do enter a protest against the practice of "scorching" and long road races; moreover, the selection of a saddle is as important to the pelvis as glasses to the eye. The reactionary engorgement of pelvic vessels following bicycle sport predisposes to the formation of piles. I have observed several cases of piles due to this practice.

Among other causes may be mentioned excessive venery, use of tobacco and other narcotics, pruritus ani, age, and sedentary habits.

The diagnosis of external is less difficult than that of internal piles, especially when the latter are in a quiescent state. In this connection I would urge the necessity of a physical examination. As has already been stated, the patient will come to you alleging piles of some kind, as bleeding, itching, blind, painful, and what not. An experience of several years has convinced me that in no case should the doctor depend upon the statement of his patient. Following such examination were revealed frequently other lesions, as polypus, fissure, ulceration, and malignant disease. Digital search usually suffices, but ocular examination through a speculum will always remove doubt. The patient should lie on his left side, with legs well drawn up. The table should be one which you can change into a double incline, so that hips and head are elevated at the same time. The Buchanan chair is admirably adapted to this purpose, besides it is cheap and easily kept clean.

Different symptoms will accompany the various stages of the disease. At the inception or stage of engorgement there is a sense of fullness, burning, and itching. Later the tumors being

well formed protrude and bleed, causing various reflexes, such as pain in loins and legs, irritation of bladder, nausea, and headache; a fissure complicating will produce much pain. The source of these symptoms is readily explained by reference to our anatomical considerations, by the connection of this region to the abdominal brain and pneumogastric nerve through intervening plexuses. The external variety as a rule will cause the patient more pain and inconvenience, since they are located near the nerve filaments supplying the anus, lighting up a spasm of the sphincters with consequent swelling and inflammation of the pile. Hemorrhoids occurring above the sphincters are free from pain, since the end organs do not supply the ampulla; on the other hand, hemorrhage is a more frequent symptom, especially when the tumors are in a state of turgescence, which generally affords relief and follows a hard stool.

Treatment. That the treatment may be quick, safe, and pleasant, the ingenuity of the physician has been severely taxed. Many devices have been urged to cure piles, from water to the most radical surgical procedures. Dr. Mathews, the recent guest of this Society, in his instructive address declared that only in late years has the medical profession become sufficiently interested in diseases of the rectum, hitherto the legacy of the charlatan.

We can not in the limits of this paper fully discuss the treatment of piles, as, in other portions of our subject, the writer only intends little more than a mere outline for the basis of a general discussion. Besides, there is sufficient material in each division for a paper. Again we refer only to the late stages of the disease, or where the tumors are well formed and permanent.

To compass the permanent cure implies (*a*) the eradication not only of the piles, but (*b*) the removal of the primary cause, for if that obstacle remain, piles will surely recur. This paper will consider only the first proposition. This disease is distinctly surgical, and should be attacked surgically, either in a quiescent or turgescent state.

The following plans have been recommended: 1. Injection. 2. Electrolysis. 3. Divulsion. 4. Crushing. 5. Incision. 6. Whitehead's operation. 7. Submucous ligation. 8. Excision and suture. 9. Clamp and cautery. 10. Ligature with incision.

Modifications of these plans have been made and reported under the guise of new operations. Most of these procedures are mentioned only to be condemned as unscientific if not fraught with danger to life or functional impairment of the organ.

The charlatan usually has resource in the method by injection, and that is probably the chief reason it is in disrepute among scientific men. However, there does seem to be some virtue in the scheme as a palliative and inhibitory agent, but the danger of emboli and sloughing should warn the doctor to proceed cautiously.

Never inject skin tags or external piles. Internal piles are more suitable for this practice, and the writer uses a solution in timid patients only who will not submit to anesthesia and operation.

The following formula has been of service:

Phenol sodique (Bobeauff's).....ʒ i;
Aquæ destillatæ .....ʒ iss. M.

Inject from five to twenty drops into the tumor. Care should be taken to sterilize your needle before each operation, nor inject more than one pile at a sitting. The solution should be fresh and clear of sediment by filtration. I have had no untoward results from the solution, but can not say that a single case has been cured.

Electrolysis, divulsion, crushing, and incision with turning out of clot promise temporary relief only.

While the American operation has many devotees, yet it will never meet with popular favor in the profession; first, because the technique is too elaborate, and second, because it impairs the organ. The dissection of the pile-bearing surface by this method involves the destruction of the rectal sense organ of Stroud, already described.

Suturing the wound after excision of the pile is rarely satisfactory, since a submucous fistula is liable to follow, owing to the failure of complete union. Wounds of the mucosa, here as elsewhere, heal better by granulation, hence the objection to the plan by extirpation and suture, though otherwise a unique procedure.

Submucous ligation is done by passing a curved needle armed with ligature under the mucous membrane at Hilton's white line and bringing it out at the same point, including in its circuit portions of the venous plexus. This plan, with the last mentioned, is among the newer suggestions.

Clamp and cautery and ligature with incision are most generally practiced. The former has an able champion in Dr. Kelsey, while the latter receives distinguished favor at the hands of Allingham, of St. Mark's Hospital, and Dr. Mathews. Both are rational measures and insure desired results with little pain to the patient, besides a limited amount of tissue is sacrificed, obviating stricture and leaving the sense organ intact. The clamp method vouchsafes a speedy cure if uncomplicated by secondary hemorrhage. Probably the only tenable argument against it is the liability of bleeding, with but a thin cautery crust to prevent it.

My own experience with the ligature enables me to recommend it without reservation in all cases. If properly done, very little pain follows, thus comparing favorably with the cautery. The technique is simple and the necessary instruments few and inexpensive.

The patient is so prepared that the rectum is clean and free from fecal matter, which is of the highest import in asepsis. As in all other operations of the rectum, the first step is to thoroughly divulse the sphincters to allow the internal piles to protrude, which should always be disposed of before the external; moreover, divulsion overcomes any tendency to spasm of the sphincters, factors conducive to constipation. Each tumor is seized with a vulsellum near the base and drawn down. An incision is made through the mucosa, to encircle the growth, cutting deeper on the lower side. It is then transfixed with braided silk ligature and each half strangulated; now cut off the pile close to the ligature, leaving the smallest amount of tissue to slough. The ligature will not slip, and it only contains in its circuit the blood-vessels, thereby precluding pain. The incision in external piles should be limited to the skin portion only, that is from the mucosa on one side to that of the other, thus precluding the formation of a fissure or contraction. All skin tags should be removed, since they swell and become tender on the slightest provocation.

When the anal orifice throughout its circumference presents a uniform engorgement and flabby skin, a safe practice is to tie them off by sections, including a goodly portion of the skin. In such a case I incise around the whole section. The smallest hemorrhoids should be disposed of first, so that they may not be overlooked, for if any remain the cure will not be complete. Of course asepsis is observed throughout.

Owing to the length of this paper we must omit the consideration of the questions of after-treatment and complications, also those of anesthesia and palliative treatment.

THE PRESENT STATUS OF RECTAL SURGERY.*

BY J. M. MATHEWS, M. D.
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Please permit me to thank you for the courtesy extended me in the invitation to read a paper before this distinguished society. At the suggestion of my friend, Doctor Foster, I have selected as my subject something in the line of thought with what has been my daily work for twenty years. Therefore, with your permission I will occupy the time allotted me in considering The Present Status of Rectal Surgery.

Of course this paper can be only a brief epitome of the more salient points of the subject, and in the consideration of the same I shall try to avoid discussion, but rather give my own views, which may be at variance with others who have written on the subject.

Time was when intelligent rectal literature was very scarce, for the reason that very little attention was accorded it by the respectable part of our profession. Hence it was but natural that diseases of the rectum were treated mainly by the charlatan. Literature from such a source would be both incomplete and untrustworthy. In the last decade or two, however, much attention has been given this subject both in Europe and in this country, and to-day the status of rectal surgery is very different from what it was twenty years ago.

* Read before the Allegheny County Medical Society, Pittsburgh, Pa., January 25, 1898, by invitation.

Across the water we are to thank for this elucidation such men as Allingham, sr. and jr., Cripps, Edwards, Cooper, Goodsall, and Ball; in this country, Earle, Bacon, Martin, Cook, Straus, Tuttle, Kelsey, Langé, Matas, Gant, Beach, and others. To-day, therefore, these diseases are receiving rational treatment from a scientific standpoint.

Whereas in the past the consideration of this part of the anatomy included only such diseases as piles and fistulæ, to-day we intelligently cope with cancer, stricture, syphilis, tumors of whatever nature, and the terrors of the same are greatly reduced.

The person who considers that only slight diseases are within the range of this special field must be advised of the resection of the rectum by Kraské's operation, of anastomosing the colon to the rectum, of the resection of strictures, of the two colostomies, and other major operations pertaining to this special surgery.

The writer begs pardon for a little personal pride in that it has been just twenty years since he embarked in this special study and urged upon his professional brethren the importance of the work. How much of this great advance from a neglected and a somewhat obscure subject to its present prominent position in the scientific world is due to his efforts, he would beg to submit to his brethren. He is fully repaid if he has been the means of encouraging the thought in others to accomplish what they have in this line, for beside their work he considers his own insignificant.

In order that some practical points may be embraced in this paper, I will take the liberty of giving some consideration to most of the important diseases of the rectum which require surgical treatment. First in the list, in a practical way, should be *Hemorrhoids.*

The writer will be excused from discussing the *palliative* treatment of any of these rectal affections, first because the time given would not permit of it, and secondly for the reason that he can scarcely recall a single rectal affection which calls for *palliative* treatment. To the contrary, he believes that all of them should be treated surgically.

Referring to hemorrhoids, it is best to give but two divisions, viz., *external* and *internal.* The external variety, of course, is

formed outside the sphincter muscle. It may appear superfluous to so state, but I do it purposely, for the reason that in many, very many cases of inflamed *external* piles it is the common practice with physicians to try to place them by force in the rectum. I do not say *back* in the rectum, for they did not have their origin in the rectum, never were there, and no effort of course should be made to push them in. Of whatever kind (external) or of whatever size, they should be allowed to remain *outside* the sphincter muscle.

Suppose, therefore, a case of this kind is under observation, what shall be the treatment? Mr. Erecsen said, "All external piles should be cut off." No better injunction can be given now. You will permit me to call attention to the difference between *cutting* an external pile *off* and "letting out the clot of blood" described by most all authors. The latter plan in my opinion should never be indulged in; far better leave nature to reabsorb the clot than to add to the inflammatory process by doing a half job. All external piles should be "cut off."

Internal hemorrhoids is a much more serious condition. In a matter of diagnosis I desire to say what may appear to you to be a very contradictory statement in so far as authors are concerned, viz., every disease or pathological condition in the rectum can be detected with the finger, except one—internal piles in a quiescent state. I say this is in contradiction to the authorities who direct that a digital examination be made in order to detect piles, and that the speculum be used in detecting any special or all manner of disease in the rectum.

What shall be done with internal piles? It would not be dogmatic to say that there is but one thing to do—operate—for no local application, as ointments, etc., ever cured an internal pile. Should internal hemorrhoids be operated on in the *inflamed* state? By all means, for thereby you stop the inflammatory process and remove the inflammatory deposit, at the same time cure the patient of his disease.

What is the best operation for internal piles? In the experience of the writer, covering twenty years and several thousand operations, he unhesitatingly says that the ligature is the safest, easiest of execution, quickest of cure, most radical in results, of all methods. Next to this plan, of course, is the clamp and cautery.

The injection of acids, etc., into the pile tumor is dangerous, unsurgical, and not attended by radical results.

Fistula in Ano. Fistula in ano should receive more serious consideration from the profession than it does. A more destructive local condition can hardly be imagined. Beginning, as it always does, with an abscess, it is fraught from its start with danger, both constitutional and local. If physicians would bear this in mind and at the very incipiency of the trouble establish free *drainage*, the comparative number of cases of fistulæ would be greatly reduced.

I have taken occasion to dissent from the division of fistula in ano as given nearly universally by authors. It is of very little significance to say that a fistula is an external or an internal one, and it is simplified not at all to add that the sinus may be complete. What is of much more purport is to indicate whether the condition is going to do little or much harm. The writer has therefore divided these fistulæ into progressive and non-progressive types. It will be observed that there is a class of fistulæ which is limited to a narrow channel, said channel being lined by a tough cartilaginous membrane miscalled pyogenic, which can be left for an indefinite time because non-progressive; another class, where the pus formation and disintegration of tissue are very rapid, which should be called *progressive*, and which demand immediate attention. To the ravages of this latter class I have often seen one or both buttocks destroyed, the perineum involved, and the peritoneal cavity encroached upon. Patients suffering from this condition often die from a slow or rapid sepsis.

In a matter of diagnosis authors lay great stress upon the matter of finding the internal opening of a fistulous track. How very unnecessary this injunction is can be estimated when it is affirmed that if an external fistula exits, it calls for an operation, and that during said operation the internal opening, if any, will be discovered. And yet I have known surgeons to refuse to operate because the internal opening could not be detected.

As to the cure of fistula in ano, it must be positively asserted that it is a surgical disease and must be cured by surgical means. The text-books on surgery very inadequately describe the operation. Copying from one *verbatim*, the directions are as follows:

"Insert a grooved director into the external opening, push it into the bowel, catch the distal end on the finger, pull it out of the anus, and then divide all the tissues remaining on director."

Such a procedure would not cure one in fifty cases. Each individual sinus must be traced and freely divided, the bottom of all channels freely cut through or curetted, and the edges trimmed closely. Occasionally we find cases in which union by first intention can be secured by bringing the edges together, but these are the exceptions. Allingham once said to me that it required more dexterity and delicate surgery to cure a complicated case of fistula in ano than any condition that he knew of. I quite agree with him.

Prolapse of the Rectum. In regard to prolapse of the rectum, the writer desires to say that he regards it as a very infrequent condition in the adult. Twelve cases will cover all that he has seen in twenty years' experience. In the infant, for anatomical reasons, it is much more frequently met with.

In the adult it always calls for surgical treatment. The methods proposed have proven very unsuccessful. The linear lines drawn by the thermo-cautery, suggested by Van Buren, are very inefficient. The taking out of elliptical pieces and suturing the edges is a slow and not very effective operation. The application of acids to the surface of mucous membrane is unsurgical and should not be thought of. The writer has proposed and practiced a free circular incision around anus, and drawing down the prolapsed membrane, which is superfluous, and removing it, and then stitching membrane to the true skin.

Pruritus Ani. It would appear at first thought that pruritus was an affection to be treated medically and not surgically. But I am sure that every physician here has been convinced of the futility of such methods. In all cases, especially of long standing, where the so-called "scarf skin" has formed, the most efficacious plan will be found to be a thorough application of the thermo-cautery, under chloroform, or what is better, a clean dissection of all the skin involved.

Fissure of the Rectum. Fissure of the rectum I believe to be a misnomer, because it is impossible for the pouch of the rectum to become fissured, as is intimated by the use of the term. Fissure of the anus is a much more appropriate term.

This affection, too, I believe, should call for surgical and not palliative treatment. It is so simple of cure by gentle divulsion of the sphincter muscle that it looks cruel to subject a patient to many weeks of treatment by burning local applications. If the physician is averse to giving an anesthetic for this purpose, let him practice moderate stretching several times with a small divulsor, and a rapid cure will be effected in the greater number of cases.

A distinction should be drawn between a fissure of the anus and an *irritable ulcer* of the rectum or anus. For the latter, free and rapid divulsion with thorough curettement should be the treatment.

Ulceration of the Rectum. The writer desires most emphatically to dissent from the view that benign ulceration of the rectum is of frequent occurrence. To the contrary, he is on record as believing that it is one of the rarest conditions found in this portion of the gut.

I would respectfully ask, especially of those who have given much study and observation to diseased conditions of mucous membrane anywhere, if it is not a rare thing to notice an innocent ulceration of the same? If, on the other hand, a well-defined ulcer is observed with elevated edges and a hardened base, is it not invariably suspicioned as being of constitutional origin? Therefore, I would beg to say that if such condition is found in the rectum, the question of an innocent origin is at once dissipated and the cause sought from conditions much more serious.

Among the list of such causes are syphilis, cancer, and tuberculosis. Valuable time indeed would be lost if such diagnosis were neglected. In order then to present succinctly my subject, I will take this proposition as granted. How shall we deal with ulcerations the result of these separate causes? 1. Tuberculosis. 2. Syphilis. 3. Cancer.

1. *Tubercular.* It is now a well-recognized pathological fact that tuberculosis may select any tissue for invasion. A local lesion early recognized, diagnosed, and properly treated will oftentimes save the patient from general tuberculosis. The rectum is a favorite seat for such deposit. Its nature is so insidious that it is seldom detected early, and if seen is taken for

something less serious. Being local in character, it precedes any constitutional symptoms, hence is easily overlooked. The microscope is of much diagnostic aid in the affection.

When a diagnosis is once made, there should be no hesitancy in applying the proper treatment. Local remedies are perfectly *nil* in their effect, and such methods are but temporizing with the disease. It should be recognized that only surgical means will avail any thing. The curette and knife are the only remedies to be thought of. The idea, of course, is to get rid of the diseased, infectious tissue. The same rule that is observed in removing a malignant growth should be practiced in operating for a tuberculous ulcer, viz., excise all the affected tissue. For this reason I much prefer the knife. The curette is a most excellent adjuvant to the knife, but when used alone is ineffectual. Indeed, the actual cautery will be found of greater service in eradicating this diseased structure than the curette.

2. *Syphilitic.* The writer is on record as believing that sixty per cent. of strictures of the rectum are caused by syphilis. This is the percentage claimed by him, and so published ten years ago. He has no reason to-day to retract the assertion. He is glad to record the fact that he has been in receipt of many letters from prominent men in the profession, both in this country and in Europe, affirming the proposition.

This was stated with some emphasis at a time when syphilis—secondary—was regarded as a small factor, or no factor at all, in causing ulceration and stricture of the rectum. He can recall the time when most eminent writers thought that the only manner in which syphilis could play a part in producing ulceration of the rectum was by the extension of chancrous pus. Instead of accepting this theory, the writer has often asserted that chancrous pus can in no manner produce syphilitic ulceration of the rectum. To the contrary, it is by secondary deposit alone that syphilis manifests itself in the rectum, and upon this theory only can a proper treatment be afforded.

I know that I will be pardoned here if I offer an explanation of certain quotations of a distinguished friend of mine in the East, who persists in saying that I affirm that ninety-nine per cent. of the cases of stricture of the rectum is caused by syphilis. In the writer's book on Diseases of the Rectum, Anus, and

Sigmoid Flexure will be found these words: "If a case presented, and after a thorough examination it could be affirmed that it was not *cancer*, in ninety-nine cases out of one hundred it would prove to be syphilis." In explanation it is argued that syphilis and cancer are so akin in symptoms, both clinical and general, that it is often an impossibility to diagnosticate between them; that syphilitic stricture is unlike all other forms of stricture save cancer. Therefore, if it proves not to be cancer, it must of necessity be syphilitic. I am sure that you can see the difference between such a statement and one affirming that ninety-nine out of every hundred cases are syphilitic.

What, then, are we to do with syphilitic ulceration and stricture of the rectum? Permit me to say that after the disease assumes the fibrous nature which constitutes a stricture, it is utterly incurable by either local medication or by general means. There is but one course to be pursued looking to a radical cure, and that is the entire resection of the affected tissue. The question then arises, can this be done? Unfortunately, the case in which such a procedure could be practiced would be a rare one. What course is left? Nothing save proctotomy and colostomy, either one of which is only a palliative remedy. This is indeed a melancholy class of patients, as incurable as cancer, with the disadvantage over the latter, that life is for a much longer period made a thing of much misery and suffering.

3. *Cancerous.* Cancer is yet the "horror of horrors" to the medical man. In its presence we bow submissively in ignorance and acknowledge our inability to cope with the monster. Located in certain regions of the rectum it assumes new features of torture, and soon evades the limits of surgical interference. And yet surgery has done much in the last decade or two looking to the eradication of this terrible disease.

In times past it would have been thought both unwise and unsurgical to have attempted the removal of the entire rectum for cancerous or other disease. To-day it is often practiced. Let us for a moment consider whether such attempt is justifiable, and if so, how often? No one denies the anatomical and surgical fact that the rectum can be removed even in its entirety, but under what conditions should such surgery be advocated? In this day of performing great surgical feats, there is such a thing

as overstepping the bounds of all reason in order to show great dexterity. Because, forsooth, one stomach was removed and the patient lived, is no reason that a search should be instituted for stomachs to remove.

It is a principle in surgery that unless all tissues involved in the cancerous disease can be removed, an operation is useless. It is a well-recognized fact that the rectum is contiguous to a large distribution of glands and lymphatics. Cancer situated above and not involving the sphincter muscle is often an insidious disease. When the mass has so far extended as to embrace the whole rectum, it is safe to infer that the infiltrative process has so extended that it has embraced structures which can not be removed; hence to resect simply the mass in sight would avail nothing. Much better to leave such a patient to the tender mercy of an opiate than to further wreck life by a fruitless major surgical operation.

If, on the contrary, the growth can be circumscribed, and the assurance had that *all* diseased structures can be removed, then resection, or rather expiration, should be advised.

I desire to say in this connection that the operation is much more preferable than to perform a colostomy in such a case. The latter can only be palliative, if that, while the former anticipates a radical cure. There have been a number of methods proposed for accomplishing the removal of the rectum, but the writer prefers to avoid such operations as Kraské recommends if a lesser one will accomplish the purpose. I have practiced removing portions of the rectum by the simple circular incision and a careful dissection of the gut with the fingers. In a few instances I have removed the coccyx, as it materially increases the field in which to work.

Walker, of Detroit, and Tuttle, of New York, as well as Alexander, have in my opinion improved on Kraské's method. It is a very serious question to decide whether this operation should be recommended. I must say that but very few cases have fallen under my observation where I thought it justifiable to remove so much of the rectum. Infiltration and glandular enlargement must certainly take place before the whole rectum can be blocked with or by a malignant growth. Upon several occasions I have had to abandon the operation because of this

fact, and regretted that I had ever begun. I would much prefer to remove the rectum for syphilitic disease than for cancer.

Disease in the Sigmoid Flexure. Before closing, you will permit me to call your attention to a non-surgical subject that has interested me for a long time, viz., disease in the sigmoid flexure. For want of a better term I have styled the trouble *sigmoiditis.* This term should be disassociated from the secretion neurosis of the colon, such as pseudo-membraneous colitis, colitis tubulosa, membraneous colitis, etc., and from a syphilitic or tubercular manifestation in the colon. O'Bierne, of Dublin, demonstrated that the flexure and not the rectum was the receptacle of the fecal mass; that by an anti-peristaltic movement the feces were carried back and deposited in the flexure if not voided. My investigations have proven this to be true. The water is rapidly absorbed and the dried fecal mass is left in the flexure to irritate. As a result we have a congestion, inflammation, and ulceration of the flexure. These patients suffer from a discharge of mucus or blood, or both, and ultimately with a muco-purulent discharge. This condition is easily mistaken for a flux or cancer. They can be quickly relieved by an early diagnosis and proper local treatment. Internal administration of medicine does no good, but a great deal of harm. The instruments to be used are a bulb syringe and a Wales bougie. The agents, large quantities of warm water, or boric acid water, fluid hydrastis, iodoform oil, etc. They will often clear up as if by magic.

I had hoped to consider the subject of the surgical treatment of ano-rectal imperforation, but my paper is already too long.

Again I thank you, gentlemen, for your many courtesies.

923 Fourth Avenue.

Gastro-Intestinal Disease.

STRICTURE OF THE ESOPHAGUS.

BY A. L. BENEDICT, A. M., M. D.,
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The esophagus is one of those organs which most physicians would concede on general principles to the surgeon, since it is not liable to constitutional disease in the limited sense, and since its normal function is as purely mechanical as can well be imagined. Unfortunately, anatomic difficulties are so great that radical operations on the esophagus are limited to partial involvement of the upper part of the tube, and also require that various other circumstances than mere location of disease shall be favorable. Thus it frequently happens that it is impossible to carry into practice the theoretic surgical indication, so that many cases properly remain in the hands of the medical attendant, while, in the majority of instances, a joint medical and surgical consideration of the conditions is desirable.

The diseases of the esophagus may, with remarkably few exceptions, be classified under the head of strictures, using the word stricture in a general sense. Diphtheria may locate in the esophagus—though very rarely. Measles probably in the majority of cases occasions some spots of affection of this organ, and, to a less degree, the same is true of scarlatina, herpetic pharyngitis, and other inflammatory conditions, even those known as rheumatic or as simple catarrhal, which commonly occur in the upper extremity of the alimentary canal. But all such conditions rarely occasion dysphagia, while the process, if infectious, is almost invariably checked by the gastric juice, or, at least, in the stomach. The only local inflammatory lesion of the esophagus which is apt to produce serious interference with swallowing is an intense one, due to swallowing hot water, alkalies, strong acids and other corrosives. Traumatisms are serious rather from the involvement and subsequent cicatricial contraction of external structures than from direct effect on the esophagus itself. Traumatism occurs most frequently from swallowing fish bones,

then from swallowing other bones, fruit pits, coins, etc., rarely from missiles or weapons penetrating from without. Occasionally a foreign body lodges in the esophagus so as to occlude it directly, without immediately causing traumatic injury. But in such cases traumatism almost always follows from efforts at removal or from pressure-ulceration if neglected.

Paradoxically, dilatation of the esophagus is really to be considered in the same category as stricture, since it either forms above a stricture—this is the rule in malignant cases and particularly at the lower part of the tube—or the dilated portion becomes filled with food or liquid and presses on the normal portion of the tube. Occasionally a dilatation exists without causing an obstruction to the passage of food. In such cases the harm is due to the weakening of the muscular tissue of a certain part of the tube and to the stagnation and decomposition of particles of intercepted food.

Neoplastic obstructions, involving the esophagus itself, may be syphilitic, tubercular, or possibly due to other forms of granulomatous disease, or they may be true neoplasms, carcinoma, sarcoma, adenoma—usually polypoid—fibroma, myoma, myxoma, lipoma, lymphoma, angioma, lymphangioma, etc. The last few, however, are rather possibilities than actually reported occurrences, and, except as a matter of extreme diagnostic caution, we may omit all of this class except cancer, syphilitic gumma, tubercular induration, and polypus.

Extrinsic conditions affecting the esophagus include the pulling action of cicatrices, producing dilatations, and pressure by aneurisms, abscesses, vertebral and fascial disease, mediastinal tumor, enlarged lymph nodes, bronchiectasis, pulmonary growths, pleural accumulations, etc. Cicatricial dilatations often result from punctures of the esophageal wall by a sharp body, accidentally swallowed. Such dilatations tend to grow larger from the repeated accumulation of food in them, and sometimes from the actual spread of the cicatrizing process. Stenosis by pressure from without, if of marked degree, is usually to be ascribed to aneurism. I have noted stenosis occurring from varicose veins of the esophagus, due ultimately to interference with the portal circulation by sclerosis of the liver. About thirty cases of such varicosity have been published, but the diagnosis is usually made

at the autopsy, having first been suggested by hematemesis or by theoretic probability. A noticeable dysphagia is rare.

Case 1. Seen in consultation with Dr. Dunham, October, 1896, was that of a woman of forty-seven. Twenty years before, she had had diphtheria, but there was nothing to suggest an involvement of the esophagus or that this point has any significance in the development of the trouble. Four or five years previously she began to notice dysphagia with solids; the symptom has increased gradually, with irregular remissions. At least two years previously, and occasionally since, she had raised blood in small quantities after choking on something swallowed. Dr. Dunham had dilated the esophagus by passing a rather rigid soft rubber stomach tube at intervals, sometimes meeting with so much resistance that the attempt failed. I could not introduce a No. 10 catheter-end thick-walled stomach tube, but passed without much difficulty olive tipped bougies corresponding to No. 28 and No. 30 of the French urethral scale. An obstruction was encountered, beginning fourteen and ending twenty and a half centimeters from the alveolar arch, and a little blood but no tissue was brought away on the larger bulb. The age of the patient suggested cancer; the duration of the trouble and absence of other symptoms were against this diagnosis. The presence of blood, both on the bulb and appearing without mechanical interference except as the passage of food may be so considered, suggested one of the conditions involving the esophagus itself. Neither history, symptoms nor physical signs enabled a positive diagnosis to be made. I asked the advice of my friend, Dr. Judson Deland, of Philadelphia, especially regarding the advisability of operation. After reviewing many of the conditions already referred to in the general consideration of the subject, he decided that carcinoma was most plausible, and advised consideration of the case by a surgeon. This, however, had already been refused by the patient. The patient has remained nearly *in statu quo* for over a year.

Case 2. Was mainly under the treatment of Dr. Eugene A. Smith, who has very kindly allowed me the use of his notes in this series.

"On October 25, 1896, a strong, well built German brewer consulted me, complaining of difficulty in swallowing. His age

was thirty-two; he had been married ten years, had four children, and gave a history free from tuberculosis and cancer. His father and mother were still living. When nineteen years old he had gonorrhea, a suppurating bubo, and several ulcers of the glans penis. He was then in the German army, and the surgeons did not treat him with internal medication for his venereal trouble, nor did they speak of his infection as syphilis. He also denied any of the sequelæ of syphilis while a soldier. From the age of nineteen he had frequently swallowed glass as an exhibition of bravado. He was in perfect health until thirteen weeks before consulting me, excepting numerous attacks of nosebleeding some years ago. For several years he had consumed from two to two and one half gallons of beer daily while at his brewing work.

"Thirteen weeks before seeing me he noticed a difficulty in swallowing food, which increased until seven weeks later he could not swallow solid food. He then consulted several physicians, who failed to help him. On examining him I found his weight 160 pounds, a loss of ten pounds, and his physical condition perfect, excepting the scars of venereal ulcers on the glans penis, and some cervical lymph nodes and the epitrochlear lymph node at the right elbow triflingly enlarged. Trying an esophageal bougie I could not pass the smallest, which was of the size of a No. 27 French urethral sound, beyond a point of constriction ten inches from the teeth. With the hope of benefiting a stricture of syphilitic origin I ordered mercurial inunctions and iodide of potassium in ten-grain doses thrice daily. On November 1st he reported, much elated, that he could swallow meat if finely chewed and slowly swallowed. He could also pass the bougie, which I directed him to continue doing daily. He was, however, hoarse and coughing, obliging me to reduce the amount of iodide of potassium, to which I ascribed his catarrhal symptoms.

"On November 22d he could no longer pass t e bougie, swallowing of any but liquid food was again impossible, and he had noticed for some days pain passing from the front of his chest through to the back.

"On December 6th his weight had fallen to 151 pounds, and he reported vomiting some mucus and blood. At this time the mercurial inunctions had produced a moderate salivation, and for several weeks longer the mercurial impression was continued until further hope of relief in this direction was abandoned.

"Early in January his weight had fallen to 140 pounds, swallowing of liquids was attended with difficulty, and the attempt to pass a bougie caused violent retching with raising of bloody mucus.

"On January 17, 1897, I opened the stomach by a median-line incision, and finding a firm mass encircling the esophageal orifice through which I could not work even a whalebone bougie of the smallest size, I proceeded to make gastrostomy according to Witzel's method. Within a few days he was fed regularly by the new route, taking eggs, milk, meat extracts, and even water, and in two weeks found he could again swallow liquids and semi-liquid food by the mouth. He gained in weight and strength for several weeks.

"About the end of February he complained of pain in the back, and began to cough and raise a muco-purulent expectoration. Early in March I detected dullness on percussing over the lower portion of the back on both sides, showing involvement of the lower lobes of both lungs by the neoplasm. From this time his digestion of food was more and more disturbed. He began to have acid eructations and burning with extreme gastric pain after taking food. He lost power to swallow, and his weight fell off rapidly. The gastric fistula developed irritability, and its orifice was surrounded with an eczematous inflammation. I now referred him to Dr. A. L. Benedict for examination and treatment, and later visited him at his home. He progressed rapidly to his end after April 10th, and mainly because of pulmonary destruction and inflammation, accompanied by profuse expectoration of an offensive purulent material and violent coughing. He was markedly emaciated when he died on April 24, 1897, three months and seven days after the gastrostomy.

"It is of interest to note that his life was undoubtedly prolonged in fair comfort a notable number of days by the operation and the consequent artificial gullet. Witzel's method of gastrostomy in this case attained the objects sought in producing gastric fistula, namely, the prevention of leakage with convenience of feeding. In the oblique fistulous tract I used a section of an English gum elastic catheter. Over the outer end I slipped a short piece of soft catheter, which I constricted with the ordinary clasp used on the tubes of douche bags. The piece of

catheter was at times withdrawn and replaced, and until the malignant disease in its progress involved more and more of the stomach itself there was no irritation in the fistula. On the removal of the tube, however, gastric contents escaped in small amount until it was reintroduced and clamped."

On March 24th I (Benedict) passed the esophageal bougie twenty-two centimeters from the incisors without difficulty. Then so much resistance was encountered that I did not like to force it farther. The patient intimated that he could pass it himself, so I let him take the staff in his hand. He forced it two centimeters farther, but was using so much force that I stopped him. A slight hemorrhage occurred, noticed both on the ivory bulb and exuding from the fistula tube. Stomach contents two hours after two raw eggs and a cup of beef broth were entirely free from starch, but showed some sugar—evidently saliva still leaked down through the esophagus. There was no free hydrochloric acid nor free acidity by congo red or benzo-porpurin, but there was a strong odor of acetic and butyric acids. Albuminous digestion, however, was very fair, as could be judged from the chemic test. There was only a slight precipitate of syntonin, a moderate one of albumose by ammonium sulphate, and a considerable precipitate of peptone. Although the stomach was somewhat large, motility was fair, as determined by the amount of chyme. The filtered gastric contents plus hydrochloric acid had only a slight dissolving action on egg albumin. He was advised to use gruels and sugar in addition to the almost absolute proteid diet which he had employed for several days, and to swallow all the saliva he could. Hydrochloric acid was introduced through the fistula. Fowler's solution was also used, partly as an antiseptic, partly with the hope of delaying the malignant process. March 26th, two hours after the simplest test meal, egg water, digestion was found almost at a standstill, without free acid, with no distinct precipitation of albumose or peptone, and with only a faint band of color above an alkaline solution of copper. The urine was reddish-yellow, with an abundance of indican and with marked coloration above nitric acid, otherwise normal qualitatively.

The autopsy showed the following abnormalities (the skull was not opened; otherwise organs not mentioned were normal):

Lungs much adherent except in front; cavity of the size of walnut in upper lobe of right, red hepatization lower lobe of right, congestion with crepitation lower and posterior portion of left lung. Stomach reaches as low as umbilicus in middle line, displaced upward and to right by distended splenic flexure, undoubtedly a *post-mortem* change, mucous membrane gray and catarrhal, with petechiæ. Esophagus patulous from below to second rib, but lower portion inclosed in a growth situated mainly behind the stomach and involving the tail of the pancreas. Lesser curvature of stomach adherent to inferior surface of left lobe of liver, which showed numerous metastatic tumors, pearly-white and the size of a pea. Otherwise the liver, except for markings of ribs and sternum and adhesions to stomach and to diaphragm, was normal.

I am inclined to think that the patient hastened death by forcibly passing the bougie. Although surgeons have used much ingenuity to avoid a straight fistula into the stomach, it seems to me that the old, simple operation is better, from the standpoint of a medical man observing such cases after operation and endeavoring, not to save life, but to prolong it. The tendency of all such fistulæ is to become straight after the lapse of some time. The endeavor to make a valvular passage into the stomach is, nevertheless, highly commendable in cases of non-malignant stricture of the esophagus, when the stomach is in practically normal condition. In necessarily fatal cases I would urge the making of a simple straight fistula, not only on account of the comparatively short period of life involved and the frequent indication for making operation as rapid as possible, but mainly for the sake of allowing the medical attendant to introduce specula, electric lights, etc., to note the progress of the case, and, possibly, for allowing the surgeon to make minor local applications to metastatic points or other parts of the stomach requiring such interference and for expediting lavage, etc. All this is by no means a criticism of Dr. Smith, who not only acted in accordance with the best surgical opinion of the day, but who had every reason to expect a longer duration of life. Regarding the etiology of cancer in a person so young, the irritation of glass may have been an initial factor, giving rise to transient irritation and recurring mild inflammation.

Case 3. Was that of a woman of fifty-five, who, in the summer of 1896, had the right breast removed on account of cancer. During the winter of 1896–7 she suffered from several attacks of bronchitis of moderate severity. March 29, 1897, she presented herself, complaining of gas in stomach and bowels, slight constipation, and general depression. The physical examination revealed nothing but a dilatation and marked sagging of the left end of the stomach. About three weeks later she had an attack of dyspnea, and I found the right lung almost solid in front, inferiorly, with coarse rales above and with the left lung acting vicariously. There was little fever, and I considered the condition of the lung largely dependent on the immobility of the right side, from the removal of the pectoral muscle. The pneumonia cleared up in about a week. On May 6th, the gastric symptoms continuing, I endeavored, in spite of the patient's weak condition, to wash out the stomach and introduce the diaphane, partly for treatment, partly to obtain information. To my surprise—for there had been no complaint of dysphagia—the tube, No. 11, passed only $28\frac{1}{2}$ centimeters; the diaphane inclosed in a No. 10 tube, only 30 centimeters. Two days later the No. 40 esophageal bulb was passed 32 centimeters. I had, of course, intended to try smaller sizes if the large one failed, but did not on account of the patient's condition. Shortly afterward a consultation was held with Dr. Hartwig, who decided that operation was not justified. Meantime a few small masses had appeared in the scar of the former operation. This patient never manifested absolute dysphagia, though she ate very little and mostly of liquid or soft food. The pneumonic condition soon returned, though never to a degree alarming of itself. She died August 18th, having lived for a month or more with remarkably small amounts of nourishment and in an extreme state of emaciation. Autopsy was not allowed, so that the exact condition must remain a matter of conjecture. It was moderately certain that the stricture of the esophagus was due to pressure from without, not connected with arterial disease, and antedating the obvious pneumonic condition. I could not help thinking that there might have been an extension of the cancerous process along intercostal or deeper lymph channels, perhaps causing a genuine cancer of lung tissue. But neither metastasis

nor extension of a mammary cancer is a probable cause of esophageal stricture, even of extrinsic type.

Case 4. Was referred November 14, 1896, by Dr. Marcell Hartwig. Four and a half months previously, following some excitement, hiccough and regurgitation of small quantities of food (not vomiting) began and had continued with only temporary periods of relief. Water did not occasion the spasm, but flavored beverages, such as coffee and soup, did. Much emphasis was laid by the patient and his wife on a peculiar rattling located by them at the level of the larynx. This symptom, however, occurred at the office, and seemed to be nothing more than ordinary gastric rumbling. A large esophageal bulb was passed to the stomach with some resistance, apparently spasmodic, felt especially on withdrawal from a depth of twenty-three centimeters, reckoning from the lips. I believe it is quite characteristic of spasm, as contrasted with organic stricture of the esophagus, that the resistance of the former is rather on withdrawal, whereas a genuine stricture, if it allows the bulb to pass at all, is overcome in large degree by the first passage of the sound. In spite, therefore, of the patient's age, forty-six, a good prognosis was given. Treatment consisted in cannabis indica and spirit of peppermint regularly, and tablets of nitro-glycerine p. r. n. Later valerian and sumbul were used alternately with cannabis indica, and the passage of the bulb was repeated at intervals of from three days to a week. On one occasion galvanism was tried, but with no apparent immediate result, and, owing to my general lack of faith in electricity, this method was not persisted in. One of the chief complaints had been of loss of weight, though not extreme, and although the hiccough was quite promptly mitigated, the patient did not gain in weight and showed evidences of subacidity of the stomach, so that hydrochloric acid was prescribed as a digestant. On December 5th I introduced two ounces of malted milk through the stomach-tube, this being one of very few instances in which I have resorted to gavage. During December the hiccough almost disappeared, and the passage of the sound was discontinued. A sensation of constriction about the lower part of the chest was complained of, and was relieved somewhat by liniments.

During January, although the hiccough did not return, the

case assumed a more sinister aspect. "Red indican" was present in the urine on several examinations, the sclerotics showed somewhat yellowish, and the skin became sallow; once a doubtful reaction for bile pigment was obtained, while there was complaint of pain in the epigastrium, to the right of the median line. It was significant, however, that the gall-bladder could not be palpated, and the suspicion grew more and more probable that the sallowness was a cancerous cachexia. On Feb. 20, 1897, lavage was attempted, with a No. 11 tube. The tube kinked and could not be forced farther than forty centimeters from the lips; in other words, it lodged just about at the cardiac opening. However, quite successful lavage was practiced at this time, without passing the tube through the cardia.

Microscopic examination of mucus from the end of the tube showed nothing but mucous filaments, leucocytes, and squamous epithelium. A few days later the esophageal sound was again passed. No trace was found of the former resistance at 23 centimeters, but all sizes of bulbs except the very smallest stopped abruptly at 40 centimeters. The smallest size was not passed, as it is capable of doing damage, and as the information which might have been obtained would simply have gratified my curiosity. Meanwhile the patient had continued to complain of burning though not acute pain about the lower part of the chest. His weight had remained stationary, and he was able to take liquid and soft solid food. About March 1st there was an account of passing black and dark-green stools, but they were not saved for my inspection, so that the significance is doubtful. In general I would throw out the warning that blood, bile, etc., in stools can not be inferred with any reasonable degree of certainty from lay descriptions. At this same time the symptoms were very favorable, the patient having good appetite, the "jaundice" having disappeared, and there being no dysphagia. On March 16th the dysphagia had reappeared, so that there was some difficulty in swallowing meat, however carefully prepared and chewed. This was my last visit, as my prognosis was not satisfactory to the family. Some weeks later the patient died, death being reported as due to malignant disease.

It seems very doubtful whether there was any real connection between the spasm and the malignant stricture of the esophagus.

The symptoms of the former had been entirely removed long before the diagnosis of the latter could have been made with any degree of probability. The locations of the two conditions were distant 17 centimeters, the former being in the portion of the tube usually the site of spasm, and where the mere mechanical pressure of the larynx may give rise to a false notion of obstruction. To say whether, in this case, there really was a spasm of the esophagus, or whether merely the resistance of the larynx against the curved esophagus was felt, would be tantamount to claiming expertness or confessing inexpertness in the maneuver. If the spasm and hiccough were due to something more than the nervous cause ascribed by the patient, that is, to the incipiency of cancer, the early symptoms must be regarded as purely reflex, not local. The relief of the dysphagia shortly before my discharge from the case I am inclined to attribute to a sloughing away of tissue, marked by one or two tarry stools. Such a cause of improvement in cancer is well substantiated for other locations. The diagnosis from biliary lithiasis was based mainly on the lack of a palpable gall-bladder. Some men sneer at the idea of confusing jaundice with cancerous cachexia; personally, I can not distinguish them at the outset, nor do I believe that there is any thing essentially characteristic about malignant cachexia. Good clinicians have diagnosed gastric cancer and supported their diagnosis by the observation of a cachexia in cases that have subsequently been cured of dilatation and catarrh.

Case 5. The unmarried daughter of patient No. 3 has recently complained of a choking sensation in swallowing and the feeling that food lodged in the esophagus. Passage of the bougie has shown no constriction nor manifest obstruction except at the larynx, where some obstruction is usually encountered. The patient is twenty-three years old, single, somewhat depressed and "nervous," but not hysteric in the ordinary sense. She has some sub-acid dyspepsia. Her mother's symptoms were almost negative, so far as the esophagus was concerned, so that mimicry is out of the question. Relief has been already secured from general treatment, and the case is reported as one of functional spasm, in contrast to the others. The possibility of hypertrophies at the base of the tongue must be considered in such cases.

A SYLLABUS AND REMARKS ON INTESTINAL OBSTRUCTION.

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Intestinal obstruction may be classified as: (*a*) Congenital (antenatal); (*b*) acquired (postnatal); (*c*) pathologic anatomy; (*d*) clinical; (*e*) mechanical.

- (*a*) Congenital (antenatal) is produced by
  1. Stenosis.
  2. Peritonitis.
  3. Absence of parts.
- (*b*) Acquired (postnatal) is produced by
  1. Invagination.
  2. Stricture.
  3. Strangulation by bands and through apertures.
  4. Volvulus.
  5. Foreign bodies.
  6. Fecal masses.
  7. Neoplasms.
  8. Tumors (external and internal to bowel).
  9. Gall-stones, enteroliths.
  10. Paralysis.
- (*c*) Pathologic anatomy.
  - This form of classification groups the kinds of obstruction into similar cases.
- (*d*) Clinical.
  1. Acute.
  2. Chronic.
- (*e*) Mechanical.
  1. Pressure external to bowel.
  2. Change of bowel outline.
  3. Blocking of bowel lumen.
- Factors which aid in diagnosing intestinal obstruction.
  1. Peritonitis.
  2. Hernia.
  3. Ulceration.
  4. Mesenteric gland disease.

Seventy per cent. of subjects having bowel obstruction have suffered from peritonitis. In three hundred personally recorded autopsies ninety-six per cent. had suffered from local peritonitis. The sphincters (1) cardiac orifices, (2) pylorus, (3) ileo-cecal valve, (4) anus — and the flexures, (1) hepatic, (2) splenic, (3) sigmoid, (4) duodeno-jejunal, are weak points of the digestive tract, liable to disease and obstruction.

- The etiology of local peritonitis is:
  1. Muscular trauma.
     - (*a*) The psoæ.
     - (*b*) Diaphragm.
     - (*c*) Diaphragmatic pillars.
     - (*d*) Abdominal.
  2. Migrations of pathogenic microbes or their products.
  3. Ulceration of mucosa and abrasions at flexures and sphincters.
  4. Perforations.
  5. Post-operative.
  6. Hernia.
  7. Mesenteric gland disease.

Peritonitis causes one third of all intestinal obstruction by

1. Bands and adhesions.
2. Omental bands and adhesions.
3. Strangulation through apertures and slits.
4. Contractions of the mesentery.
5. Normal structures abnormally attached, as the appendix, snares, and loops of intestines, Meckel's diverticulum, pedicles of tumors, and appendicæ epiploicæ.
6. Paralysis.
7. The chief local peritonitis occurs in the large bowel.
8. Attacks men and women about the same.

Symptoms of peritonitic obstruction.

1. Complete obstruction (gas and stool).
2. Vomiting.
3. Tympanites.
4. Peritonitis.
5. Periodic pains; a five to six-day course.

Prognosis—without surgery almost always fatal.

Invagination causes one third of all intestinal obstruction by

1. Projecting one segment of bowel into an adjacent one.
2. Subsequent strictures, paralysis, perforation, and peritonitis.

The localities of invagination.

1. Ileo-cecal and ileo-colic, 50 per cent.
2. Enteric, 30 per cent.
3. Colic, 20 per cent.

Kinds of invagination.

1. The inflammatory variety.
2. The invagination of death (non-inflammatory).
3. Invagination is nearly always downward.

Age of patients.

1. One fourth of all invaginations occur in infants.
2. One half of all invaginations occur before ten years of age.
3. Invagination is a disease of childhood.

Etiology of invagination.

1. Irregularity of the muscles in the gut well.
2. Lack of control of the cerebro-spinal system over the sympathetic.
3. Invagination doubtless frequently arises and disinvaginates, for I was compelled to suture the invagination in position when experimenting on dogs.

Name of the parts of an invagination.

1. Outer layer (intussuscipiens).
2. Inner and middle layer (intussusceptum).
3. Apex (where it first sloughs).
4. Neck.

Symptoms of invagination.

1. A sudden onset of periodic exacerbations of colicky pain (later becomes constant).
2. Blood in the stools in eighty per cent.
3. Severe tenesmus.
4. Tumor may be felt in rectum or abdomen.
5. Course of invagination is about five days.
6. Vomiting and tympanites are not conspicuous.
7. Infrequently a tumor can be felt.
8. Partial obstruction.

Prognosis of invagination.

1. Perhaps fifty per cent. of cases disinvaginate spontaneously with no evil effects.
2. Some forty per cent. of invaginations spontaneously recovered subsequently die from the effects, as stricture and perforation.
3. Acute cases last about five days, while I have observed chronic cases last a year in the colon.
4. Invaginations which become pathologic are quite fatal.
5. Surgical procedures are the only rational methods, yet good results are had from forcing air into the rectum.

Volvulus produces obstruction by rotating a loop of bowel around its mesenteric axis (or one loop of bowel about another). It constitutes one fortieth or about two per cent. of all intestinal obstruction. We have (1) volvulus of the sigmoid flexure, sixty per cent.; (2) volvulus of the ileo-cecal region, thirty per cent.; (3) volvulus of the small intestine, ten per cent.

Etiology of volvulus.
1. A long fatless mesentery (enteroptosis).
2. Constipation.

Symptoms of volvulus.
1. Complete obstruction.
2. Marked tympanites.
3. Pain, first periodic, later constant.
4. A course of seven to ten days.
5. More frequent in men.

Prognosis — without surgical interference almost absolutely fatal.

Strictures of the intestines are produced by
1. Typhoid fever.
2. Tuberculosis.
3. Syphilis.
4. Dysentery (?).
5. Catarrh.
6. Hernia (trauma).
7. Malignancy.

Lesions of the mucosa (ulceration) and trauma of the muscularis and serosa are accountable for many strictures.

Location of strictures.
1. Colonic strictures are five times as numerous as the small intestine.
   - Colon.
     - (*a*) Sigmoid, 50 per cent.
     - (*b*) Descending colon, 25 per cent.
     - (*c*) Transverse colon, 15 per cent.
     - (*d*) Ascending colon, 10 per cent.
2. Small intestine.
   - (*a*) Ileum, 80 per cent.
   - (*b*) Jejunum, 20 per ct.

Neoplasms produce obstruction by
1. Carcinoma.
2. Sarcoma.
3. Adenoma.
4. Myoma.
5. Lipoma.
6. Angioma.

The above-named tumors may produce obstruction by pressure. Conspicuous in obstruction from pressure are pelvic tumors, and the rectum is the segment of the bowel affected. The portions of the bowel in order of frequency which suffer obstruction by pressure are, (1) rectum (fixed), sixty per cent.; (2) sigmoid and descending colon (fixed), fifteen per cent.; (3)

lower ileum and ascending colon (fixed), fifteen per cent.; (4) duodenum (fixed), six per cent.

Obstruction is produced by foreign bodies, especially at
- 1. The sphincters.
  - Pylorus.
  - Ileo-cecal valve.
  - Anus.
- 2. The flexures.
  - Hepatic.
  - Splenic.
  - Sigmoid.
  - Duodeno-jejunal.

Gall-stones produce obstruction four times as often in woman as man. After the stone enters the intestine it enlarges. Enteroliths cause a small percentage of intestinal obstruction. Fecal masses produce intestinal obstruction, but far less than is generally supposed. The fecal masses accumulate and irritate the mucosa until a catarrh arises which produces sufficient secretion to soften the feces, permitting evacuation. I believe constipation is a neurosis of the fecal reservoir (sigmoid, descending colon, and left half of the transverse colon, that is, that portion of the colon supplied by the inferior mesenteric nerve). Hence the nerve element dominates in constipation and ileus paralyticus prevails.

The causes of constipation are
1. Irregular habits.
2. Neurosis.
3. Improper diet.
4. Heredity.
5. Lack of exercise.
6. Deficient development.
7. Peritonitis.

The Diagnosis. The practical questions to ask a patient who is supposed to be suffering from intestinal obstruction is: (1) How long since a bowel movement? (2) How long since gas has passed per rectum? (3) Has the subject had peritonitis? (4) Has he had hernia? (5) Has the subject been attacked with sudden abdominal pain? (6) The physician must then take a general view of the leading symptoms of the abdominal trouble. (7) The different forms of intestinal obstruction must be considered. (8) The symptoms of intestinal construction must be considered as regards locality, for each locality has certain modified symptoms. (9) The various affections which may be confused with intestinal obstructions should be considered. (10) Some of the factors to be considered in intestinal obstruction are, (*a*) pain; (*b*) collapse; (*c*) vomiting; (*d*) passages of stools or

gas; (*e*) to a certain degree temperature and pulse; (*f*) amount of urine passed; (*g*) visible movements of bowel loops.

The treatment is medical or operative. The medical treatment consists in, (*a*) nourishment, especially per rectum; (*b*) the use of opium, poultices, and cathartics; (*c*) the use of electricity, ice, massage; (*d*) the injection of gas (insufflation) or fluid in the rectum; (*e*) rest. Surgical treatment consists in opening the bowel and attacking the cause of the obstruction.

IRVING, PAULUS A., RICHMOND, VA.: MECHANICAL INTESTINAL OBSTRUCTION.

At a recent meeting of the Richmond Academy of Medicine the author presented the following report:

The patient was found tossing in bed from excessive pain. The day before he had been perfectly well, had had a copious evacuation, and ate a hearty supper. An hour after, there were violent abdominal pains, which persisted the entire night in spite of various household remedies. The pain was localized around the umbilicus, and there was considerable gastric disturbance. Enemata brought away only a slight action; but the stomach became easier. Calomel was administered and followed by a saline, which came back. The patient was seen several times during the day, and at night was removed to Virginia Hospital. High enemata were given, but they came back only slightly stained. The patient gradually grew worse and was finally operated upon. Five or six inches above the ileo-cecal valve was found a band so tightly hugging the gut that when it was severed it made a popping noise. The patient reacted well; but because of peritonitis and paresis, no evacuation was had until the next evening, and this was produced only after several high enemata. Recovery was uneventful. For a long time the patient had suffered from constipation and was much emaciated. It was hard to say what produced the inflammation. About ten years ago he had a similar attack, which must have been appendicitis, and the later trouble might have been due to it. The appendix was not carefully sought.

Clinical Memoranda.

THROMBOSIS OF THE SUPERIOR MESENTERIC VEIN: REPORT OF A CASE WHERE ABDOMINAL SECTION WAS PERFORMED.

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The following case is reported because it exemplifies a very rare pathological condition apparently demanding surgical interference, although, as was afterward shown, no operation could have saved the patient.

Herman B., aged fifty years, was admitted to the service of Dr. Rudisch at Mount Sinai Hospital on December 17, 1897. The family history of the patient has no bearing on the case. The man himself had been subject to diarrhea, which was a symptom, too, during the attack under discussion. For three years there had been "difficulty in breathing," and there was dyspnea at the time of his admission.

Four weeks earlier the present trouble began, the first symptom noted having been pain in the right iliac fossa, soon radiating over the entire abdomen. There was loss of appetite, dryness of the tongue, great thirst, and nausea without vomiting.

On admission the patient was found to be a rather well-nourished man in a weakened vital condition. The tongue was dry and coated; there was marked cyanosis.

Lungs: Anteriorly there was a vesiculo-tympanitic note over both sides; dullness with prolonged expiration, numerous crepitant rales and diminished breathing over right base, and sibilant rales over the entire chest. Posteriorly there was a poor percussion note over both sides, with increased voice and breathing on the right.

Heart: No enlargement; accentuated second pulmonic; pulse small, weak, and regular; some endarteritis.

Spleen: Enlarged to percussion.

Liver: No enlargement.

Resistance was felt in the entire epigastrium. Varicosities were present in the lower extremities, but there was no edema.

When the man came in his pulse was 110, respirations 28, and temperature 99.8° F. He required immediate stimulation because of the weakness of his pulse and the cyanosis.

An enema was followed at first by a loose movement, and later on by two yellow fluid evacuations. During the morning of the next day there were five loose, yellow passages, and in the afternoon seven more, two of which were involuntary. The pulse-rate varied between 92 and 102, the respirations being about 28. Repeated doses of morphine were given.

At six o'clock the same evening the patient suddenly went into collapse. There was profuse perspiration, and the pulse became imperceptible and did not respond to stimulation. At the same time an area of dullness appeared in the hypogastrium, which gradually extended upward toward the umbilicus, there being a distinct line between this dull area and the tympanitic intestinal resonance above. A stool containing blood made one think of an internal hemorrhage, and when the man's collapse became more profound every minute and another sero-sanguinolent stool appeared, the diagnosis seemed quite plain. The location of the hemorrhage, however, could only be guessed at.

Dr. Rudisch had requested that the surgeon on duty should see the patient, and in the absence of Dr. Gerster I was called in. On the way to the operating-room, where he was taken for further examination, the patient had another bloody stool and became moribund. When I saw him, an hour after the beginning of the collapse, there was no pulse, the heart sounds were all but imperceptible, there was complete unconsciousness and total absence of the corneal and pupillary reflexes. The eyes were turned upward; a few shallow and gasping respirations were noted, any one of which might have been the last. In short, the man was practically as good as dead. There was a veritable race with death as to whether the house physician should get the infusion canula into the man's basilic vein before the last gasp. Just as the patient stopped breathing the saline infusion fluid began to run into the vein. Artificial respiration was at once begun, and I ordered a drachm of the tincture of digitalis to be poured into the infusion bottle. The immediate result was dramatic. It was like the raising of the dead. The man began to breathe, then to react to the pain of the wound in his arm, which now began to bleed, to move his eyes, and even to speak.

He became perfectly conscious, and followed directions with intelligence. The pulse gradually became perceptible, then quite full and regular; I knew, however, that the hemorrhage was still going on, and as a desperate measure I determined to open the man's abdomen with the forlorn hope that I might find it possible to locate the bleeding point and check the hemorrhage. Of course no anesthetic was used; in fact, stimulation by camphor and ether and by oxygen inhalations was kept up.

A median incision about four inches long was made, having its center at the navel, and at once a large quantity of bloody, serous fluid escaped. A knuckle of small intestine, which seemed to be a fair sample of the entire gut, was drawn out of the wound for closer examination. It was deeply blood-stained, was almost black, and seemed to be filled with clots. An incision into its lumen revealed blood clot in the interior, and disclosed the fact that there was, without doubt, parenchymatous bleeding. The case was now regarded as absolutely hopeless, and the operation concluded by packing the opened knuckle of gut into the abdominal wound. About five minutes later the man breathed his last.

A partial *post-mortem* examination was made through the wound by Dr. Hauswirth, house physician. The findings were as follows:

Lungs: At right apex, healed tubercular focus with few adhesions; at right base, hypostatic pneumonia.

Heart: Pale and flabby; myocarditis; slight thickening of aorta; valves practically normal.

Liver: Not enlarged, though somewhat congested.

Kidneys: Congested; capsules adherent; slight interstitial changes.

Spleen: Congested.

Stomach: Contained bloody fluid.

Intestine: The duodenum was normal, but at the end of this part of the intestine a sharp line of demarkation between normal and hemorrhagic gut appeared. The jejunum and ileum were dark colored and hemorrhagic throughout all their coats, and this condition of the intestine extended as far as the ileo-cecal valve, where it ended sharply, the colon being merely edematous.

Mesentery: For about a half inch below the vertebral attachment this structure was unchanged, but below this point it was

dark colored and hemorrhagic, as was the small intestine. In the superior mesenteric vein a thrombus was found just above the bifurcation of the vessel and extending into its minute subdivisions, this obstruction to the circulation being doubtless responsible for the hemorrhage into the gut and for the man's death.

The examination was necessarily rather incomplete because of the circumstances under which it was made, so the exact cause of the thrombosis was not discovered, though I do not doubt that the history of long-continued diarrhea might give a hint of septic phlebitis starting in the interior of the intestine. Aside from the interest attached to the report of a rare case, this history illustrates in a most forcible manner the great value of intravenous saline infusion in the most extreme conditions. This man was almost as good as dead, yet had the pathological cause been a removable one he might have survived a life-saving operation.

679 Madison Avenue.

GANT, S. G., KANSAS CITY, MO.: NEURALGIA OF THE RECTUM. (*Langsdale's Lancet.*)

Sufferers with this disease are usually of highly nervous temperament, and are inclined to magnify their ailment. Coccygodynia and neuralgia of the rectum are considered under the same head by the author, as they are so much alike clinically. There is severe pain in the coccyx or sacro-coccygeal region, paroxysmal, lancinating, or burning in character. There is absence, on examination, of heat, tenderness, or swelling. It occurs more frequently in women than in men. Fissures or irritable ulcers may cause symptoms simulating neuralgia. It may be caused by exposure, sitting on cold steps or damp grass, and irregular habits, and the pain is increased by violent exercise, sitting long in one position, or in defecation. It is diagnosed by the peculiar location and character of pain without any visible cause being present. If due to a displaced coccyx, the pain is increased by manipulation of it. In every case the treatment is the treatment of the cause. Fissure, displacement of pelvic organs, fractured or dislocated coccyx, when properly treated, relieves the distressing symptoms of neuralgia of the rectum. Removal of the coccyx may be necessary.

Abstracts and Selections.

SURGICAL AND OTHER HOSPITAL SERVICE: A TENTATIVE AND CRITICAL ESSAY ON HOSPITAL MANAGEMENT.*

BY ARPAD G. GERSTER, M. D.,
NEW YORK.

In a paper read before the New York Surgical Society, December 22, 1897, Dr. Arpad G. Gerster said that the Society being made up of only men holding hospital service, it was most fitting that a subject of this nature should be brought before them.

No one can sum up the untold blessings humanity has derived from the hospital work of medical men, through personal service and scientific discovery.

Every nation but our own has accorded to the medical expert that position and authority to which special knowledge and usefulness to society entitles him. Only in America is denied coordinate influence in the management of institutions the chiefest work of which is performed by medical men.

Object. My object is to expose and brand this barbarous and disgraceful anomaly unwise and illiberal repression. Under existing conditions high excellence in these primitive postulates of surgical success is simply a matter of the system.

A first inspection of our metropolitan hospitals will make a favorable impression upon the laymen. The more critical eye of the expert may be captivated by a sumptuous exterior or internal splendor. Nowhere can the complicated machinery of a large modern hospital be found to run with such well-oiled smoothness. But this does not constitute the main object and purpose of the existence of a hospital.

The Soul of Hospital Work. The *punctum salicus,* the soul of hospital, is the curing or alleviating of disease—medical work. Liberal provision of the means, by the community, by taxes or the voluntary contributions by humane benefactors, which funds

*New York *Medical Record*, January 22, 1898.

are managed by boards of directors, has given us an array of luxurious buildings, well appointed inside and out in what appeals to the outer senses. But the very soul, the medical service proper, is shamefully neglected. During the past fifty years the dimensions of our hospitals have enormously increased, but the imperfect, makeshift provisions for the medical service have been retained intact to this day.

That the provisions for the medical care of our hospital patients are inadequate, I propose to show: First, by direct examination of existing methods; and second, by comparison between our ways and those of other civilized nations.

Genesis of American Hospital. As villages grow to towns, the need of a place where the poor man can be taken care of when overcome by sickness becomes apparent. A small building is secured by the efforts of a few enthusiastic laymen, dragging along a reluctant train of well-to-do but sluggish patrons and protectors. No difficulty is experienced in securing the medical staff. As the funds have been furnished by the town or magnanimous donors, it is only fair that the medical profession should contribute to the good work its gratuitous services. The inducements are many: Honoring distinction, flattering vanity, coveted opportunity for clinical observation and therapeutic effort. The service being gratuitous, it would be unfair to expect one set of men to bear the entire burden. Two, three, or more men are appointed to take charge of the service in alternation, reducing the work of each incumbent to a minimum, and jealousy is avoided. The hospital house staff get board and lodging, but no pay.

Primitive Medical Service. The growth of towns and cities has led to enlargement of existing hospitals and to the foundation of new ones, and thus while the size and scope have attained first-class importance, the providing for the medical service has remained in its primitive state.

Co-ordinate Representation. The governing bodies may be divided into municipal, ruled by politicians, and non-political or private corporations. Of the latter nothing can be desired as to personal integrity and business capacity. The scientific work of the institution can not be carried on without the external and business management, the only *raison d'etre* and duty of which is to provide shelter, food, order, and cleanliness.

With the growth of the scope and scientific intensity of modern hospital work, the management, both business and scientific, has become more complicated and requires special knowledge in those at the helm. Existing conditions do not guarantee this special knowledge and experience on the part of those to whom the government of our hospitals is entrusted.

Lack of Food, Medical and Surgical Supplies. Public charities are notorious for defective feeding and housing and inadequate provision for medical and surgical instruments and apparatuses; this in striking contrast to the proofs of high business efficiency in appearance of our private institutions.

The system now prevailing in the selection of hospital governors can not provide us with properly schooled and trained managers. "Anybody can run a hospital" is the opinion expressed by a very intelligent member of one hospital board, as he looked upon it as being very much like a hotel visited by medical men.

Hospitals in Europe. The care of and responsible direction of a hospital service is the highest dignity, recognized as such by all civilized nations but ours by granting to the medical men holding it both security of position and ample remuneration, with that influence in management of the service and appointment of his own assistants, ward discipline, and initiation of the necessary changes and improvements.

No novice is intrusted with such grave responsibilities—only men whose professional excellence and efficiency are recognized by the profession and laity. Professional excellence to the laymen usually implies a large or lucrative practice, but does not insure success in hospital practice. Long service as assistant, liberal, scientific, and literary training, with an independent service in a smaller hospital, are legitimate stepping-stones to such a position. The undignified scramble for vacant positions is demoralizing.

Method of Appointment Humiliating. Applications for such positions are humiliating to the candidate and unworthy of an enlightened body of managers.

A wise choice concurrently by the medical and lay boards, and a call extended to the object of their choice, would constitute such a preference a real honor.

Given permanent and sole charge of a large and attractive service, with an adequate salary, making the first duty to the hospital and independence from anxiety as to securing daily bread, train all assistants, give them a moderate salary, long tenure of office, and make them fit for advancement.

Under these circumstances regularity of visiting hours and operating and an orderly routine would naturally follow and secure the comfort and welfare of the patients by eliminating haste, disorder, hollow excuses for neglect of duty, create an air of promptness and secure precision in detail, with greater economy of surgical materials.

Where five or six men have the care of sixty or seventy patients, undivided attention is an impossibility, nor can justice be done when the visiting staff come when they can. This results in superficial examinations, or attention being given only to those patients which in the house surgeon's opinion are in a precarious condition. Visits are curtailed as to time and frequency, and the detailed daily and hourly treatment is entirely in the hands of an enthusiastic but inexperienced, often indiscreet, occasionally vicious and incompetent, house physician or surgeon.

Consultant to the House Staff. The visiting surgeon is no longer the man "in ordinary," but becomes consultant to the house staff, upon whom it has a very demoralizing effect, resulting in confusion and peril to the patients.

Hardly has A broken them in to a modicum of surgical cleanliness when B enters, and the whole structure is declared rubbish and other methods introduced. This engenders a lack of respect or honor toward their leaders, whom they openly criticize and ridicule, and throw overboard all that is important together with the rubbish. Painstaking observation and recording the inconspicuous but important features of cases are neglected for showy operations, without learning to make a decent diagnosis or knowing or caring for painstaking after-treatment. The medical histories are but a mixture of truth and pleasing fiction.

Competitive Examinations Not a True Test. Competitive examinations for the house staff are no test of practical fitness and bad for the welfare of the patients. Honor men who pass theoretical oral examinations with flying colors may be perfectly

worthless in service. No systematic activity on the part of the house staff is possible, while this system of periodic change and irregular attendance on the part of the visiting staff gives much scope to immature and irresponsible young men, and no excuse can be offered for perpetuating such a beggarly system in this the richest city in christendom. It is the duty of every medical man to hammer at this subject until every hospital has a well-paid and efficient medical staff.

Well-Paid Chief. The attending staff should be made up of men of wide experience, a chief for each department of from one hundred to one hundred and fifty beds, immovable during good behavior, paid an adequate salary, and permitted to practice in the afternoon. He must attend daily at regular hours in the morning. This would at once result in a natural systemization and regularity about a daily routine on the subordinate factors, such as are assistants, nursing, kitchen, drug-store, and every department, followed by the greatest benefit to the patient. The warden or superintendent should be a graduate in medicine of recognized executive ability. The house staff should be selected by the chief of each department from the dressers or volunteers who have served one year and proven their practical fitness; paid a moderate salary, board and lodging, and encouraged to serve for a long term.

Timber of the Managers. Among the governing boards of our hospitals there exists an intolerant suspicion on the part of the laymen, which shuts out expert knowledge so essential to the proper conduct of the medical work. This narrow policy affords the medical man but an apologetic advisory influence upon the work of the institution, whereas not only fairness, but the plain interests of the patients, demands expert knowledge in technical matters in the board. Ample provision is made for maintenance, reckless expenditure, magnificent buildings far in excess of necessities; no available funds are left for even the main objects, and the medical man remains unpaid. How useless to clamor for salaries from private corporations!

Agitation for Reform. To hope for combined action on the part of professional men is chimerical, first because entrance to professional ranks is too easy; the inrush of promiscuous elements from various trades, elements lacking even vestiges of a liberal

education, the transplantation of the mental and moral attitude of the trader into medicine is only too obvious.

We can accomplish something only by appeal to the enlightened and progressive laity. Agitation is necessary; appeals to the taxpayers will undoubtedly result in a rational organization of medical service in public hospitals, though much time and labor must be expended to secure to patients and medical men their due. With competent and zealous medical men wisely repressing the laymen toward the showy external part of charitable work, luxurious palaces half filled with patients, indifferently cared for by an antiquated and effete system of medical service, will not be erected, far in advance of the existing, huge deficits not yawn in every annual report upon the patrons and supporters of so many hospitals, and mutual concession and respect among the lay and professional laborers in this field of charity will certainly result in a better care of the patient, and, on the part of the medical men, in the consciousness of work well done because properly acknowledged and rewarded.

Conclusions: 1. That the present manner in which provision is made for the medical work in municipal and private hospitals is crude, inefficient, and unfair to both patient and medical man.

2. That all municipal hospitals ought to be provided with permanent medical officers, whose adequate remuneration should be defrayed by taxation; that superintendents and wardens should be medical graduates of acknowledged business capacity.

3. That by introducing a permanent and continuous service, each hospital department of about one hundred to one hundred and fifty beds should be directed by one responsible chief having safe tenure during good behavior, aided by a corps of paid assistants.

4. Private hospitals with limited means should not erect costly and vast buildings maintained with much difficulty, but should rather spend the means in providing a paid corps of permanent medical officers. Even a modest salary would insure a daily and zealous attendance on the part of the visiting men, whose number would be reduced at the ratio of one chief to one hundred to one hundred and fifty beds. In the mean time, while pay for medical work, to be provided by endowments or otherwise, is not feasible, important and valuable improvements

are possible: first, through unification, continuity, and permanency of the service; and, second, through encouragement of a long service on the part of members of the house staff by payment of moderate salaries.

5. The responsible heads of various departments should have adequate compulsory representation in the governing boards of each hospital.

DAVIS, GWILYM G., PHILADELPHIA: THE OPERATIVE TREATMENT OF HEMORRHOIDS. (*Therapeutic Gazette.*)

The author describes a method of excision which he employs in preference to ligature or clamp and cautery in many cases, though he is partial to the ligature.

As to preparation for an operation for hemorrhoids, it is advised to administer a purge at least two successive days previously, and early in the morning of operation to give an enema of soapsuds, and another just before operating. Next stretch well the sphincters, which in itself will sometimes cure hemorrhoids. Through a speculum introduce a piece of gauze to prevent discharges from coming down, grasp the apex of the pile with a hemostat, raise it, and apply the long slender forceps. With a round sewing needle threaded with catgut, pass a stitch through and back again beneath the clamp and tie. Repeat this until the whole amount of tissue included in the clamp is ligated. It is essential that a round and not a cutting needle be used. If the skin has been included in the grasp of the clamp, an incision should be made through it with a scissors. The portion of the pile above the clamp is then cut away and the latter loosened. Any bleeding points should be ligated. The operation is completed by inserting with a curved needle and catgut as many sutures as may be desired to approximate any cut or bleeding surfaces. The sponge is removed from the rectum, an iodoform and opium suppository introduced, and a T bandage applied. To move the bowels on the fourth day with the least pain, a two-way catheter is introduced, washing away with warm saline or borax solution any accumulative feces. This procedure may be repeated for two days, when teaspoonful doses of epsom salts can be given until fluid movements occur.

Correspondence.

NEW YORK LETTER.

[FROM OUR SPECIAL CORRESPONDENT.]

ADMINISTRATION OF SCHLEICH'S SOLUTION; APPENDICITIS, GENERAL PERITONITIS, SECONDARY ABSCESS, FECAL FISTULA, RESECTION, RECOVERY; X-RAY BURN NECESSITATING AMPUTATION; PECULIARITIES OF X-RAY BURNS; RUMKOFF COIL CAUSE OF BURNS; PINWORMS IN THE APPENDIX; POSTERIOR GASTRO-ENTEROSTOMY WITH MURPHY'S BUTTON; CONGENITAL STRICTURE OF PYLORUS; CALCULI IN STENO'S DUCT.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Administration of Schleich's Solution. Dr. Willy Meyer, January 10, 1898, made a few remarks on the best way of administering Schleich's solution for general anesthesia, and exhibited a mask which he has especially devised for that purpose. He considers that the *essentials* for safe administration are, *first*, the anesthetist should have had careful training, and that no other be allowed to give anesthetics; *second*, the three ingredients of the solution, ether, chloroform, and benzine, must be pure, and, *third*, the solution must be applied to the cone or inhaler uniformly, drop by drop. In order to secure the latter, Dr. Meyer has modified Esmarch's mask by increasing the depth; by adding a second wire frame over the first and placing a funnel upon the second or uppermost part to hold the solution, the neck of the funnel being so arranged that by screwing it up or down increases or diminishes the outflow of the solution upon the mask. Between the two wire frames, which are hinged together, is placed a layer of flannel, and over that a layer of oil-silk; through the oil-silk, directly under the funnel outlet, a hole is made, through which the solution drops upon the flannel or upon a perforated metal disk, so placed as to insure an equal distribution of the solution.

The *paper and towel* cone, *open at the top*, will answer, but it is more difficult to control the amount of solution, its uniform administration, and the supply of air.

A very careful watch must be kept on the *respiration; deep breathing* indicates that *less* of the anesthetic is needed. Care must be taken to secure complete anesthesia before beginning the operation. In old and feeble persons, children, or those suffering from bronchitis or heart disease, solution No. 1 should be used; in healthy adults, solution No. 3.

Dr. J. P. Tuttle said that of the four or five cases in which he had used this solution, in two there had followed an unusual degree of mental excitement. Anesthesia was rapidly accomplished, and recovery therefrom unusually prompt.

Dr. Kammerer said he had had a complete collapse following its use, but he believed this to be due to the inexperience on the part of the anesthetizer. Of the thirty or forty cases in which he has used it, recovery was rapid and very satisfactory.

Dr. Lilienthal mentioned his use of this solution in six cases, one of which suffered from very severe and persistent vomiting. He asked Dr. Meyer if the construction of the face piece was such as to exclude all air, and if so, whether this is desirable? Also, is the funnel so arranged that it can not be put out of order and result in a gush of the solution which would smother the patient?

Dr. Erdman asked if any special preparation of the patient is necessary, and if morphine and atropine were given in conjunction therewith?

The Chairman, Dr. Van Arsdale, said that his experience had been somewhat limited and not very satisfactory. Two cases were asphyxiated on the table. Many vomited and coughed during and after the anesthesia, and suffered from great mental excitement afterward.

Dr. Meyer, in answering, said that he had seen but one case of undue mental excitement after using this method; in many cases excitement may be due to pain. *Vomiting* has occurred in forty-four per cent., a great reduction from that of other methods. *Collapse* is due to *overdosing* and inexperience. The quantity of *air* must be much less than with chloroform, but the opening in the mask must be over the nose, so that air is inhaled with each inspiration. In regulating the *quantity* by the funnel, as it is directly under the eye of the anesthetist, he would be able to at once see any change in its adjustment. *Morphine* is certainly of

benefit in alcoholics. The *benzine* must be of pure quality, distilled at a definite boiling point. One of Dr. Meyer's patients who had been anesthetized six times before with ether, chloroform or both, was again anesthetized by Schleich's solution, and the next day volunteered the information that this was the least disagreeable method he had experienced.

SCHLEICH'S MIXTURES.

No. 1.	℞	Chloroform	45 parts;
		Petroleum Ether	15 parts;
		Sulphuric Ether	180 parts;
		Boiling point	38° C.
No. 2.	℞	Chloroform	45 parts;
		Petroleum Ether	15 parts;
		Sulphuric Ether	150 parts;
		Boiling point	40° C.
No. 3.	℞	Chloroform	30 parts;
		Petroleum Ether	15 parts;
		Sulphuric Ether	80 parts;
		Boiling point	42° C.

The lower the boiling point, the more transient the anesthesia and greater its adaptability to operations of short duration.

Only petroleum ether which boils at 60° to 65° C. should be used; the ordinary benzine of commerce, which boils at 55° C., is not suitable for anesthetic purposes.

Appendicitis. Dr. R. P. Francis, February 14, 1898, reported the following case: W. F., boy of fourteen years, in spring of 1897 had an attack of pain in right iliac and left epigastric region. In three or four days all subsided, and he was well until October, 1897, when he suffered from nausea, pain in *left* iliac fossa, and all symptoms of a general septic peritonitis. Incision showed a ruptured appendix, very red, and pus distributed throughout the peritoneal cavity. Gauze packing was used for drainage. He did well during the next week, and wound healed in two weeks, when a swelling appeared in the umbilical region, and was diagnosed as a secondary abscess. Median incision, one pint of pus evacuated, with free discharge of fecal matter. There were several gangrenous spots on the intestine. No feces or flatus passed by rectum. Dr. McBurney advised against further operation at that time. "Keep the abscess draining." Next day a free stool *per rectum.* January 6th the sinus had con-

tracted down to lead-pencil size. Patient vomited, bilious; relieved by enemata. January 10th re-entered hospital. Median incision, colon collapsed, small intestines distended. Cicatrix and sinus cut out by two elliptical incisions in median line. Adhesions separated, three to four inches gut excised, end to end with Murphy button. Hot saline enemata and abdominal cavity filled with the same. Operation three hours; extreme shock. Rallied after free stimulation. Four or five hours after the button put in place there occurred a free movement of the bowels *per via naturales*. The button was felt in the rectum on the eleventh day, and removed by the finger the next day. Patient left the hospital in three weeks.

Dr. Kammerer said that in some of these cases resection will fail, owing to the changes in the peritoneal coats of the intestine and dense adhesion, which seem to affect the power to firmly unite, and leakage often occurs.

Dr. Morris considers that it is not wise to spend too much time in separating adhesions, but that it is better to resect above and below, and unite the ends which are free and healthy.

X-Ray "Burn" Necessitating Amputation Above the Knee. Dr. J. P. Tuttle exhibited a rather unique section of a knee-joint which he had amputated owing to chronic ulceration following the use of the X-ray. The knee had been crushed during the war, and had given pain ever since. Four years ago a floating cartilage was removed, and gave some relief for three years. Three months ago an X-ray was taken, and it was not until three weeks after that any manifestation of trouble was noted, when the whole joint area sloughed out, granulated but did not heal. Skin-grafting was tried and apparently was successful for four or five weeks, but the fifth week sloughed away, leaving an area six and a half by five and a half of raw surface. This was accompanied by extreme pain. Constant irrigation gave relief for two or three days, when pain returned and slough reappeared. General condition very poor. February 7th, amputation well above granulating area. Good recovery. The joint shows about a dozen pieces of fractured bone united by fibrous bands.

Peculiarities of X-Ray Burns. Dr. Bronson spoke of the interesting features in connection with these injuries following

the X-ray, in that it is not a burn, but a process which begins from *within* and extends outward to involve the skin. Further the late appearance, one or two weeks, beginning as a slight blush, then in erythematous patches, becoming confluent, and lastly sloughing away, not a wet nor a dry gangrene, but in a tough "chamois like" layer.

Dr. Vissman said that he had not yet given the specimen a careful examination, but he had found a well-marked arteritis and thickening of the periosteum.

Dr. Gibney, who had seen the case in consultation, considered any treatment other than amputation would have been useless. He had seen an X-ray burn which at the end of eighteen months had not healed.

"Rumkoff" Coil the Cause of "Burns." Dr. Tuttle called attention to the reports which have demonstrated that the "burns" have only occurred when the "Rumkoff" coil has been used, and none where this has been replaced by *static* electricity. A thin sheet of aluminum is said to prevent these burns. Few recover under nine months. Fowler cut away all the sloughing area, and it healed in five weeks. In Apostoli's case the area healed and broke down again, and was not well at end of eighteen months. It has been noted that applications, such as are used to allay pain in an ordinary burn, increase the intensity of the pain in these cases, and in all cases nothing but liberal doses of morphine will render life bearable.

Pinworms in the Appendix; Localized Tubercular Peritonitis. Dr. Woolsey reported a case of appendicitis, fourth attack (interim), where at the tip of an otherwise healthy organ a bunch of pinworms were lodged. He also put on record a case in which an area two and a half by three inches in the neighborhood of the appendix showed miliary tubercles. The interior of the appendix was normal. The case presented all the symptoms incident to an ordinary attack of appendicitis. It is of interest to note that the mother of this patient died of consumption.

SURGICAL SOCIETY.

Posterior Gastro-Enterostomy with Murphy's Button. Dr. Meyer, February 23, 1898, presented a man, fifty years old, upon whom he had operated, December 12, 1897, for benign stricture

of the pylorus. For six years he had had stomach trouble, and had been treated for enlargement of that organ. He came under Dr. Meyer's care June, 1897, and lost thirty pounds in the following six months. In December, previous to operation, the stomach was found markedly enlarged, pylorus could not be felt, but peristaltic movements were visible through the abdominal wall. This is looked upon as the most distinctive symptom. Hydrochloric acid abundant, lactic acid absent. Slight adhesions in the region of the pylorus were separated and the mesocolon split. The stomach was then drawn out of the cavity and attached by Murphy's button to the jejunum. In spite of the thickened stomach wall this was readily accomplished. Pulse very bad at close of operation, and saline infusion was practiced while the patient was still upon the table.

As the results have been so favorable (twenty-three cases without a death), Dr. Meyer considers Murphy's button the best device for these cases. Suture to the posterior wall is very difficult; the button easy, rapid, and in five cases, where the patient's condition has been very low, has been successfully accomplished under cocaine anesthesia. Saline infusions, while the patient is on the operating-table, will at once improve the quality of the pulse and heart's action. This may be repeated, if necessary, two or three times in twenty-four hours.

Congenital Stricture of Pylorus in a Baby Six Weeks Old. Dr. Meyer also related a case in which he had performed posterior gastro-enterostomy on a child six weeks old, weighing but seven pounds, for congenital stricture of pylorus. The jejunum was contracted so that its lumen would hardly permit the introduction of the smallest Murphy button. The operation was quickly done. After a short time the baby vomited all nourishment, and continued to do so until death. *Post-mortem* examination showed that death was due to obstruction caused by the button. Dr. Meyer has had a smaller size button made to meet such cases.

Calculi in Steno's Duct. Dr. Frank Markoe exhibited two calculi, one of which had been removed by his father from Steno's duct in 1891, and the second was removed by himself from the same patient in 1892, when it was found necessary to slit up the duct in order to extract the stone. The patient has been well ever since.

A. ERNEST GALLANT, M. D.

MATHEWS' QUARTERLY JOURNAL

—OF—

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JOSEPH M. MATHEWS, M. D., EDITOR.

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SURGICAL AND OTHER HOSPITAL SERVICE.

The article quoted from in this number, by Dr. Arpad G. Gerster, contains references to questions which are of the greatest importance to the profession to-day. The writer gives much deserved praise to the work done by the medical man, and recognizes the importance of the hospital service in making these accomplishments possible. But the present management of hospitals is deplored, the universal lack of recognition in this country of the medical experts in the hospital governing boards. It is pointed out that a superficial view of the subject will show the "orderly, smooth, quiet running, complicated but well-oiled machinery," but it is the medical work, which is "the very soul of the hospital," which is in a shamefully rudimentary state. In following the first hospital in a primitive community from its foundation, it is shown that the medical profession must render gratuitous services as their part of the contribution toward its maintenance if not its foundation. The management of the hospital, however, is placed in a governing board, generally appointed as a political reward instead of selected for fitness and worth. In consequence there is defective feeding and housing, inadequate provisions for medical and surgical instruments and apparatus. The present manner of appointing visiting men is improper and humiliating to medical men, there being most

undignified scramble for vacant hospital positions. "Permanency of service and the obligation entailed by financial remuneration create a responsibility and strictness of official obligation entirely different from what can be fairly and reasonably expected when services are gratuitous." This applies to the training of assistants as well, who should be attracted by "moderate pay and longer tenure of office."

As the staff is at present constituted, the bulk of the work is done by an inexperienced though enthusiastic house staff. The irregular visits of the attending men, the confusion of ideas caused in the house staff by frequent changes of their medical superiors, and the operating mania tend to cripple the efficiency of all hospitals.

"If only the welfare of the patient is to be considered, the present cheap and wretched method of providing hospital assistants ought directly to be abolished." They are appointed as the result of a theoretical examination of questionable value, and without experience are entrusted with the care of the patients. As soon as they become experienced and of value they are removed by limitation of service. These are all live, burning issues, and this article should attract the attention of every one interested in hospital management and hospital work.

THE LOUISVILLE JOURNAL OF SURGERY AND MEDICINE.

The next issue of this journal will appear as a *monthly*. It was the intention of the editor from the beginning of its publication to change it from a quarterly to a monthly just so soon as it had proven its ability to live as a dignified and clean journal. Many friends have urged for a long time that the change be made, but not until now has the editor seen his way to make it. The subscription and advertising lists have all the time been very satisfactory, but with the first appearance of the journal as a monthly we are sure that both the subscriber and the advertiser will be more than pleased.

At the last meeting of the Louisville Surgical Society this journal was made its organ, and its proceedings each month will be published in this journal *exclusively*. The Surgical Society has gained a national if not an international reputation for the able, scientific papers and discussions that characterize its meetings. The name of the journal will be changed in order to indicate its scope, and will hereafter be known as THE LOUISVILLE JOURNAL OF SURGERY AND MEDICINE. Every department both in surgery and medicine will be represented. The two departments which have made the QUARTERLY so popular will be continued, viz., rectal and gastro-intestinal diseases. All the specialties will have wide scope given them, but special consideration will be given to general surgery and medicine.

While thanking all those who aided in making the QUARTERLY such a pronounced success, we bespeak their aid in making the monthly the same. No personalties shall ever appear on its pages, but the whole and sole aim of the editor shall be to make it a pure and up-to-date journal.

J. M. MATHEWS, *Editor*.

THE DENVER SPECIAL.

Ever since Denver was chosen as the next place of meeting of the American Medical Association, the profession of that city and of the State have been untiring in their preparations for the entertainment of their guests; with them it is a great, live, burning issue.

They assure their visitors a good time, according them the hospitality of the metropolitan city of the foothills in the true western sense of the word. It is the modest desire of Denver to eclipse in point of numbers the Philadelphia meeting, and it is planning to entertain a larger number than that of a year ago, and to give that number a cordial welcome, a good meeting, and a good time.

The Denver Special has been planned with the greatest care and consideration of the minutest detail which will contribute

to the comfort of its passengers. It will be handsomely equipped with sleepers and dining-car, and will proceed from St. Louis west by special schedule. The Special will be made up at this point by special parties from all points, the Greater New York Special, the Philadelphia and Pennsylvania Special, the Kentucky Special, the Dixie Special, the Indiana Special, etc., each party bringing from one to two car loads each.

A short stop will be made at Kansas City, where the Special will take aboard the members of the Association of Military Surgeons and a number of the local profession.

The train will be personally conducted and the comfort of the passengers looked after by railroad officials. Baggage cars will run with the train, so passengers may get at their baggage en route, when desired, without inconvenience.

The rate is the all-absorbing question, but has not been yet officially announced. It is generally conceded by all that the rate will be one fare for the round trip, certainly west of the Mississippi, and more than likely from all other points. On that basis from St. Louis the rate will be $24.50 for round trip. Sleeping-car reservations should be made early by writing Dr. Henry E. Tuley, 111 West Kentucky Street, Louisville.

The schedule will be as follows: Leave St. Louis Saturday, June 4th, at 10:30 P. M.; arrive in Kansas City Sunday morning, June 5th, and arrive in Denver Monday morning, June 6th.

A beautiful itinerary of the trip is now in the course of preparation, and will be mailed on application to Dr. Tuley.

THE ALLEGHENY COUNTY MEDICAL SOCIETY.

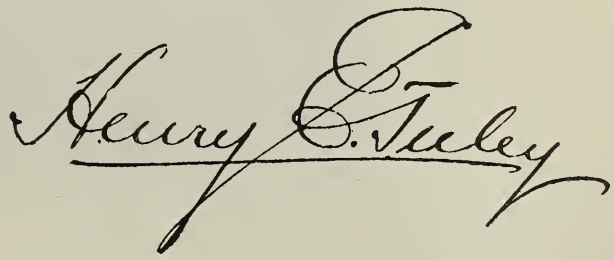
The editor was honored by an invitation to address The Allegheny County Medical Society, at Pittsburgh, Pa., on the evening of January 25th. The occasion was a very delightful one, and will long be remembered. The members were very kind in giving the privilege of seeing the many notable places in their great city. We are especially under obligations to the Faculty

of The Pennsylvania Hospital and School for the privilege of inspecting these two most worthy institutions, and for the courteous compliment of being invited to lecture and hold a surgical clinic before the large class assembled. We are especially indebted to those two distinguished and affable members of the local profession, Drs. Foster and Daly, for many courtesies, and indeed to all that we had the pleasure of meeting. Long live The Allegheny County Medical Society.

With this issue the connection of the undersigned with the Quarterly ceases.

He takes this occasion to express his appreciation of the many courtesies received at the hands of his co-laborers in the editorial field, the many contributors to the journal, and the advertisers.

The attention of exchanges is called to this with the request that the address of the Quarterly be changed from Box 434 to 923 Fourth Avenue, Louisville, Kentucky.



Obituary.

DR. W. S. O'NEAL.

Dr. W. S. O'Neal died on March 15, 1898, at his home in Lancaster, Ky., after a brief illness, from broncho-pneumonia. He had been a sufferer for years from bronchial asthma, and his death was a great shock to his many friends. Dr. O'Neal was born in Verona, Boone County, October 3d, sixty-one years ago. He graduated in medicine from the Ohio Medical College in

1861, and at once began the practice of his profession at Verona, where he continued to reside until thirteen years ago, when he moved to Lancaster, where he has since resided. In 1861 he was married to Miss Mattie Yancey, of Grant County, three children being the result of the union. His widow and one daughter survive him.

He was a member of the Kentucky State Medical Society for more than thirty years, was a consistent member of the Baptist Church, and a leading figure in the management of the local church.

A few weeks prior to his death he was appointed a member of the State Board of Health, which position he resigned when he realized his illness was of such a serious nature.

Presection stitches.

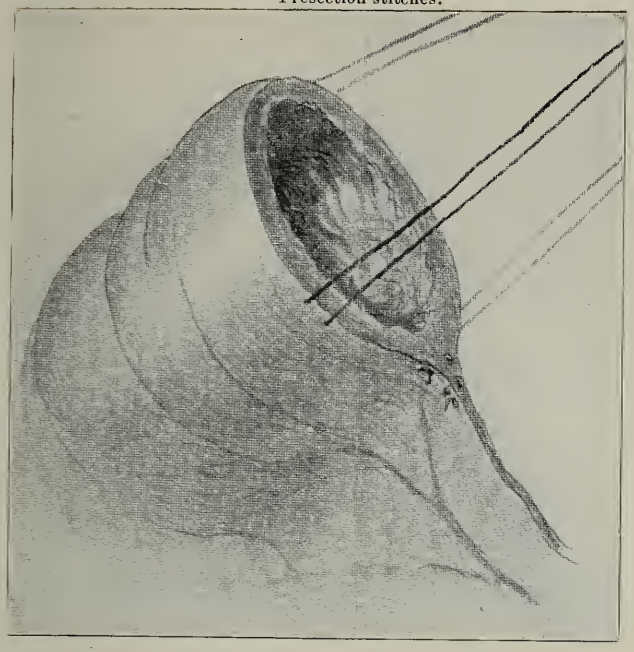


FIG. 2.

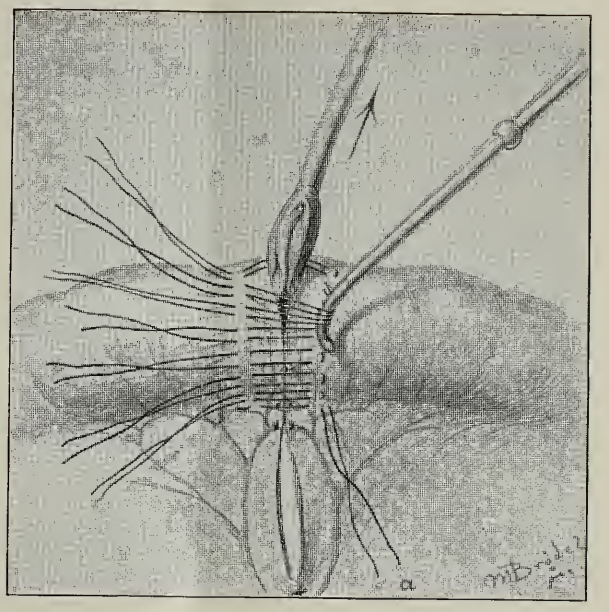


FIG. 8.

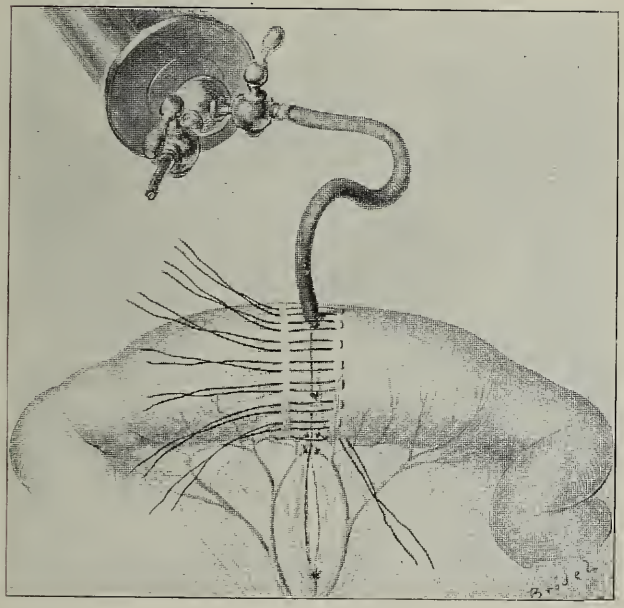


FIG. 7.

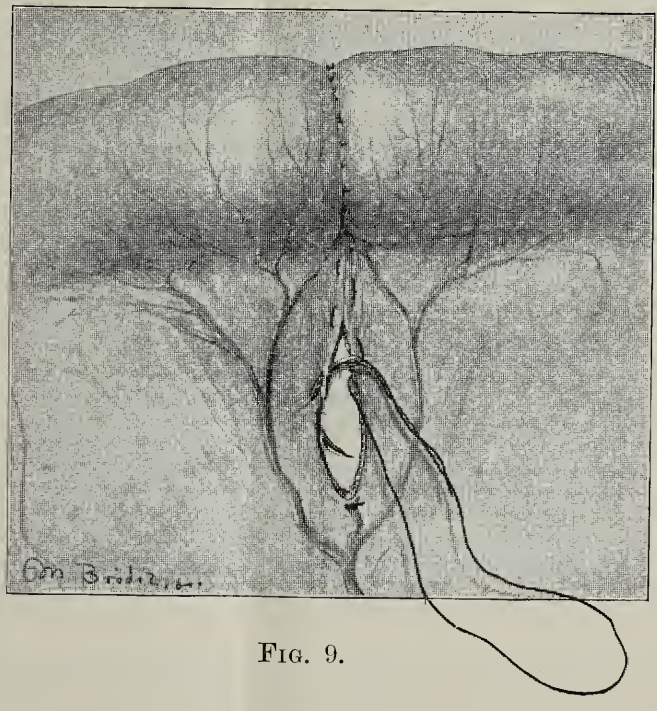


FIG. 9.

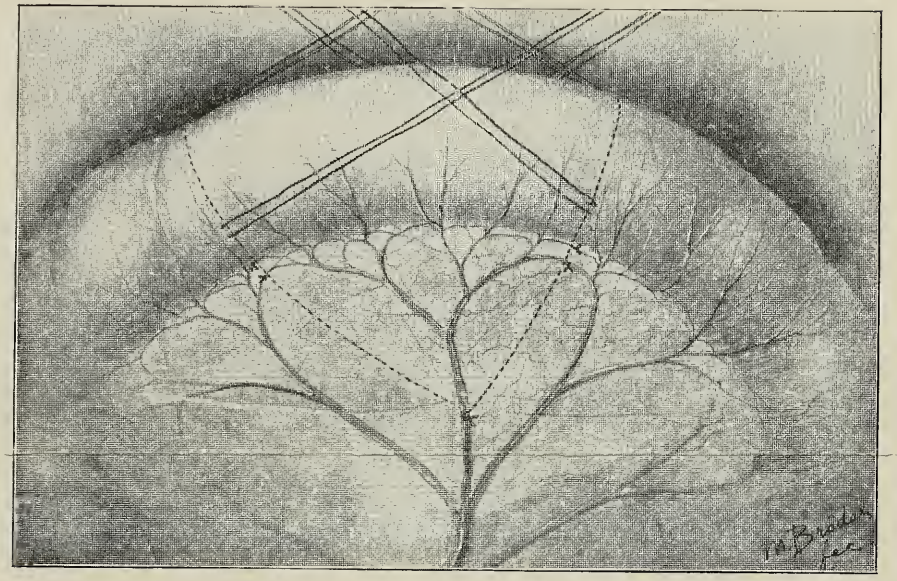


Fig. 1.

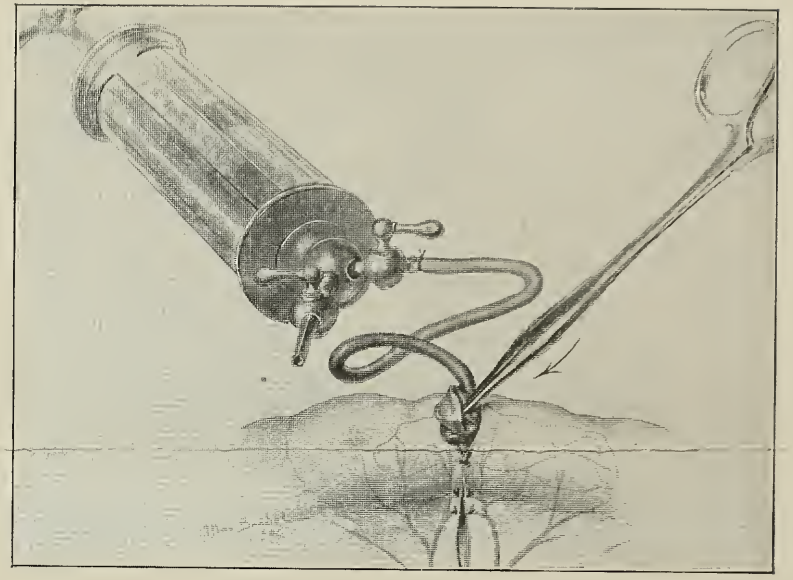


Fig. 4.

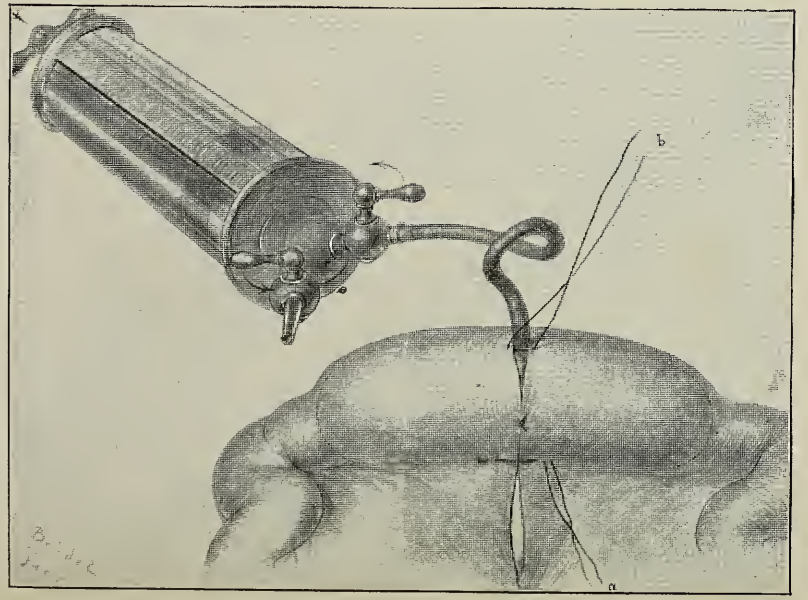


Fig. 5.

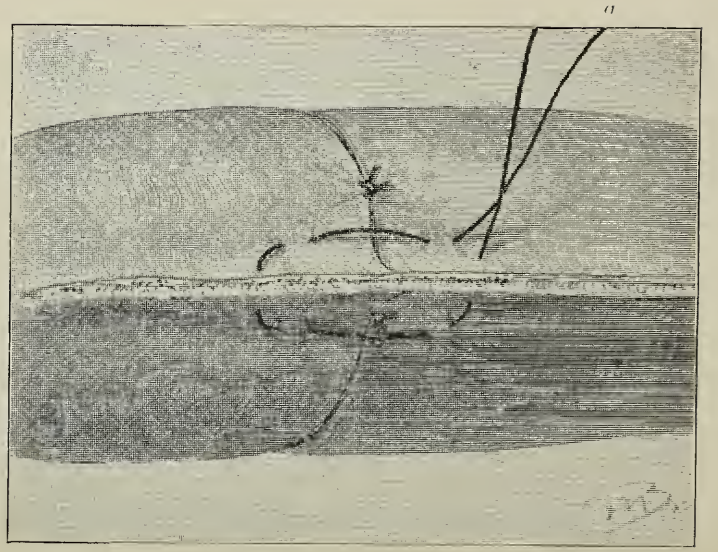


Fig. 6

With Our Exchanges.

GASTRO-INTESTINAL DISEASE.

Halsted, W. S., Baltimore: Inflated Rubber Cylinders for Circular Suture of the Intestine. (*Johns Hopkins Hospital Bulletin.*)

Figs. 1 and 2 show the presection-stitches applied. It is immaterial whether these stitches perforate the wall of the intestine or not, for they are cast off eventually into the bowel. The method of ligating the mesenteric vessels is also accurately shown in Figs. 1 and 2, which were drawn from life. The intestine should be divided carefully with scissors as close to the presection-stitches as possible. No visible blood-vessels are occluded by these stitches.

Fig. 3. The rubber cylinder inflated. For the human small intestine the diameter of the cylinder is from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches. It would be better to have cylinders larger than necessary rather than too small.

In Fig. 4 two of the presection-stitches have been tied, and the collapsed rubber cylinder is being pushed into the bowel with a forceps.

Fig. 5. The three presection-stitches have been tied. They are supplemented by a fourth stitch, *b*, which is removed later to facilitate the withdrawal of the bag. The bag has been inflated with air by the syringe. Water might, of course, be used instead of air; but a bag distended with air would perhaps more quickly reveal a prick from a faulty stitch than a bag distended with water.

The stitch *a* (Fig. 6 and also Figs. 5, 7, and 8) is the first and most important of the mattress or permanent stitches. The submucosa is picked up four times by this as by all the mattress stitches, and the mesentery is twice perforated by it (Fig. 6). This stitch insures the proper turning in of the mesenteric border.

Fig. 7. The bag is still distended, and all of the mattress stitches have been placed. From seven to nine of these stitches suffice in operations upon the small intestine of the dog, and from

ten to twelve in operations upon the human subject. The first stitch to be drawn home and tied is *a*. The mesenteric border is turned in by it infallibly. *Not a single visible vessel is occluded by the stitches* (Figs. 7 and 8). On the right side the stitches pass under one vessel and over another, without interfering with either, and on the left side a vessel lies under the stitches, uninjured.

Fig. 8. Two mattress stitches drawn aside on a hook; the temporary stitch has been removed and the collapsed bag is being withdrawn.

Fig. 9. The circular suture is completed; the slit in the mesentery is being sewed in such a way that its circulation is not interfered with.

Advantages of the inflated rubber cylinder in circular suture of the intestine:

1. The vermicular action of the bowel is arrested over the bag, and the stitches can, consequently, be placed at regular and proper intervals.

2. The distended bag unrolls and spreads out to a fine edge the everted raw edge of the intestine (Fig. 4), and enables the operator to place the stitches with great precision at the desired distance from this edge.

3. If distended intestine is to be sutured to collapsed intestine (in strangulated hernia, ileus, etc.), or intestine of larger to intestine of smaller lumen (jejunum to ileum, duodenum to esophageal end of the stomach, etc.), the smaller may easily be expanded to fit the larger piece.

4. Very little handling of the intestine itself by the operator is necessary. The tube from bag to syringe is used as a handle to rotate and elevate the parts to be united.

5. The cylinder takes the place of at least two assistants. The operation could readily be performed without an assistant.

6. It prevents escape of intestinal contents, and hence dispenses with the injurious clamps or the fingers of assistants.

7. The entire operation, exclusive of suture of the abdominal wall, can be performed on dogs in five or six minutes, and probably in less time.

The results should, I believe, be better than by any method hitherto devised.

KELYNACK, T. N., MANCHESTER, ENG.: ON MECKEL'S DIVERTICULUM. (*British Medical Journal.*)

Meckel's diverticulum forms the remnant of the omphalo-mesenteric duct. Some time ago the anatomical Society of Great Britain and Ireland published the results of a collective investigation as to the occurrence of this diverticulum ilei. As a supplement to this list the writer publishes an analysis of the cases which have been met with recently in the pathological department of the Manchester Royal Infirmary.

Number and Proportion of Cases. Among 1,446 subjects examined, 18 examples of Meckel's diverticulum have been met with. This gives a proportion of 1 in 80, or not quite 1 per cent.

Sex. This embryonic vestige seems to occur more frequently in the male. In our cases the proportion was 11 males to 7 females.

Age. This is merely of interest in so far as it shows that this fetal remnant does not greatly predispose to serious intestinal derangements. The average age of the 18 cases was 38 years, that of the males being 36 and that of the females 38 years. The eldest male was 60, the youngest 14; the oldest female 62, the youngest 13 years.

Cause of Death. In no instance was the presence of the Meckel's diverticulum in any way connected with the cause of death. In one case at least it was so placed as to have readily allowed of the occurrence of an internal hernia.

Position. The distance of the diverticulum above the ileo-cecal valve averaged 34½ inches; the greatest was 50½, the smallest 15 inches.

Length. The average length of our 18 specimens was nearly 2¼ inches; the longest 6½ inches, the shortest half an inch.

Size. This varied considerably. The diameter in 12 averaged an inch and a half. One of the largest specimens was discovered in a male subject, aged 42, dying from acute pneumonia. The diverticulum was connected with the ileum by a narrow mouth three-quarters of an inch wide, and then extending to a diameter of an inch, rapidly widened into a large pouch almost as big as the cecum. It had a diameter of 3¼ inches, and a circumference of 10½ inches. It lay quite free in the abdomen. Possibly its large size may have been due to distension by the intestinal contents.

Connection with Intestine. In all the cases the diverticulum freely communicated with the intestine. In only a few instances was the mouth distinctly smaller than the lumen of what might be called the body of the diverticulum. Occasionally the origin from the gut proved to be distinctly funnel-shaped. No valve was present in any case.

Relation to Mesentery. The diverticulum always arose on the far side from the mesentery, although not always immediately opposite to it. In one instance it was adherent to an adjoining fold of mesentery. Generally the diverticulum came off at right angles to the gut, but in some subjects it was placed a little obliquely to the intestinal canal.

Contents. In no instance did the diverticulum contain any foreign body. Often there was nothing but air, but in some a little fecal matter was present.

Special Characters. Two specimens had a cord-like structure coming off from their termination. In one the cord was fixed to the abdominal wall, forming a loop. One had a bifid extremity. Several had bulbous or club-shaped terminations, with secondary lateral dilatations. Many were mere nipple-shaped projections.

In no instance was the lumen of the diverticulum continued to the umbilicus or abdominal wall.

Buchman, A. P., Fort Wayne, Ind.: The Therapeutic Value of Arsenauro. (*New England Medical Monthly.*)

To fully appreciate the therapeutic value of a drug one must understand its limitations. No remedy can be made to do more than a limited number of things. To ascertain just what pathologic conditions are modified or changed for the better by a given therapeutic agent is a task of no mean importance, yet an absolute necessity when we aim to be rational in our methods.

For the past four years Arsenauro has been one of the chief factors in my therapeutic armamentarium because of its almost universal happy effects in the special line of work that I have, almost exclusively, engaged in. The body of work has been in the field of denutrition and false metabolism, depending remotely upon gastric and intestinal indigestion.

It is not my purpose at this time to classify and enumerate an extensive list of such patients, but rather to give a very short

clinical history of a type case in which the phenomena that reached the threshold of consciousness were sufficiently distinct to induce the opinion that a diverse etiology, rather than a single line of clevage, was necessary in order to reach a logical demonstration of the causative factors in operation, and therefore rationally outline a therapeutic course destined to terminate in satisfactory results.

Abnormal metabolism and denutrition express themselves in direct relation with constitutional idiosyncrasies, hygienic environments, and the vulnerability of the organism. Bearing this in mind, we can comprehend why one patient will present a pathology of the lungs, another a kidney affection, and still another a disease of the nervous system, while the point of departure from the health line in all is the same.

The first case in which I noticed gratifying results following the exhibition of Arsenauro was that of a traveling insurance adjuster who had suffered with gastric indigestion over a period of five years, in consequence of which his blood stream was impoverished, his nervous system shattered, and the whole organism working at the lowest possible pressure. The particular symptom that brought him to me was insomnia. He was forced to quit work on this account. A further description of this case is unnecessary, as the clinical picture is familiar to every one. A thorough cleansing and disinfection of the digestive tube was the first step, after which I carefully regulated the diet so as to insure the greatest quantity of nutrition for the least amount of energy expended by the digestive forces. Bathing, massage, and electricity were ordered. The usual carminative and tonic drugs were exhibited. This course was persisted in for a month, during which there was noticeable betterment, but not sufficient to satisfy either the patient or myself. I now withdrew all the former drugs and gave him Arsenauro in ten-drop doses four times daily. In ten days the patient was sleeping comfortably, eating and digesting fairly well, and altogether was sufficiently recovered to go to work moderately. After sixty days' constant use of the drug he announced himself as having entirely recovered and able to perform the exacting work required of him with ease and pleasure. The recital of this case will suffice to illustrate the groove into which Arsenauro fits so perfectly. It changes the chemical

movement in the blood plasma. The movement of the atoms thus initiated continues; new material takes a more pronounced part in the various phenomena of motion and life; the lymphatic glands, whose office it is to supply fresh material to the blood and nervous system, are changed to healthy action, their products become normally reconstructive; cell digestion is stimulated, and the blood is improved up to a normal standard.

To accomplish these results, however, it is not enough to simply give Arsenauro. I have tried to expose the preparatory work which is absolutely essential, and without which Arsenauro, like any other drug given out of time and place, will yield only negative or indifferent results.

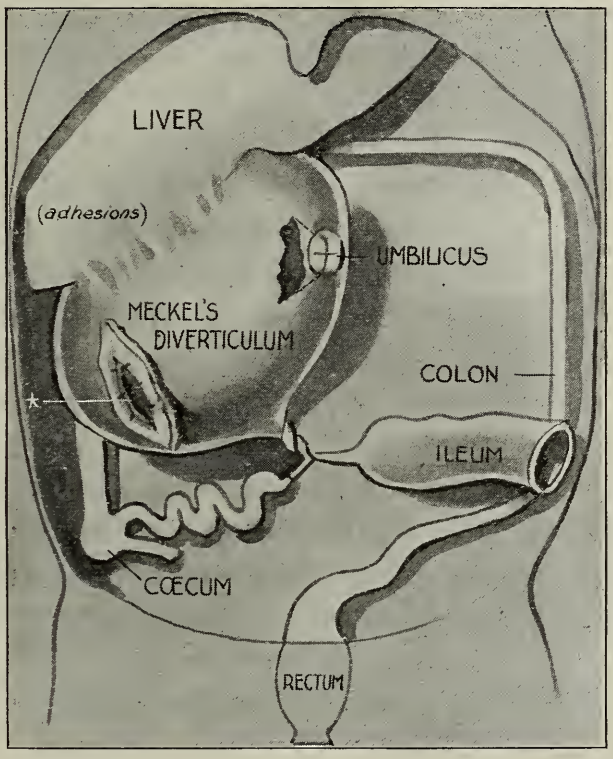
I have never secured from Fowler's solution the fully desired arsenic results which have invariably followed the administration of Arsenauro, and yet, as Dr. Stucky over a year ago pointed out in his scientific paper, the average dose of Arsenauro contains very much less actual metallic arsenic than does Fowler's solution. We evidently have an entirely new agent in Arsenauro, something more than the mere combining of arsenic and gold, for by evaporating Arsenauro you have a resultant crystal which is not the crystal of arsenic, nor is it the crystal of gold, but a crystal such as I have never seen before. I would lay emphasis upon the point that I have observed no evidence of arsenical poisoning from Arsenauro. It does not produce cumulative effects, but is easily and promptly assimilated.

CARWARDINE, THOS.: VOLVULUS OF MECKEL'S DIVERTICULUM. (*British Medical Journal.*)

L. P., aged two days, was brought to the Bristol Royal Infirmary on October 15, 1897, on account of intestinal obstruction. The child had been repeatedly sick, bringing up a greenish-brown vomit, and had passed nothing *per anum*, nor discharge from umbilicus. The belly was much distended, and exploration of the rectum with the finger revealed no cause. The child was watched and treated for six hours, but nothing passed.

Operation. The distension appeared more on the left side, and accordingly celiotomy was performed in the left semilunar line. Here the small intestine presented, very much distended, with lymph upon its surface from peritonitis. The colon, when

brought to the surface, was very small, not larger than a crow quill, whitish, empty, and non-sacculated. With the finger in the abdomen I could feel bimanually a mass to the right of the umbilicus. A second incision was therefore made in the right semilunar line, when much distended gut presented, which it was impossible to bring out of the opening, owing to numerous adhesions; and for the same reason the source of obstruction could not be felt, although it seemed almost certain that it was due to an anomaly of Meckel's diverticulum. On making an



*Enterostomy aperture, with skin attached.

artificial anus, a considerable quantity, several ounces, of meconium escaped. The cecum and ascending colon were small, white, and empty. The symptoms persisted, and the child died twenty-four hours later. At the *post-mortem* examination it was found that a meconium-containing cyst had been opened, produced by a volvulus of Meckel's diverticulum of some three turns, as in the figure. Only a fine impervious cord connected it with the bowel below it, and a minute stalk, which would partially admit a bristle, attached it to the distended bowel above, the junction being a T-shaped one.

The points of interest to which attention should be drawn are:

1. The *ante-partum* commencement of peritonitis, as shown by the lymph and adhesions of firm character to parts around.

2. The occurrence of the volvulus of Meckel's diverticulum *in utero*, during late fetal life, so that a meconium-containing cyst was segmented off from the meconium-containing ileum, and therefore obstruction was not relieved by opening the distended diverticulum.

3. The lower twelve inches of small intestine were empty and tortuous, and the colon small and non-sacculated. No meconium had ever passed into them, yet the cecum and appendix were well formed. This disposes of a common view as to the development of the cecum.

Byers, J. Wellington, Charlotte, N. C.: Infantile Constipation. (*Journal of the American Medical Association.*)

There are some reasons of an anatomic and physiologic character why we would naturally expect to find constipation in infants of frequent occurrence. The muscular structure of the infant bowel is feeble and thin, and possesses but little capacity to propel the feces onward when they have once assumed consistency and bulk. The descending colon of the child is also longer than other parts of this bowel, and readily permits of dilatation and sagging when there are accumulations within. From these physical and anatomic causes, together with the fact that the intestinal juices in general are very much lessened in children, we can easily perceive how constipation may be common in this class of subjects.

Constipation is almost exclusively associated with a purely milk diet, nurslings being the most commonly affected, receiving an overplus of milk. Next in point of occurrence come the infants fed upon sterilized or boiled milk, and least of all babies fed on raw cow's milk, or a mixed died of starch and milk. The author believes that there is a real connection between the milk diet and the constipation, but, contrary to the accepted belief ascribing it to casein, he believes it due to an excess of fat. Clinical experiences in other conditions of the digestive tract will aid us here. It has been shown repeatedly that the very first step in the decline of the digestive functions of the child

was an increase in the amount of the fat in the stools; that the primary stage in dyspeptic infants is failure to use fat.

It was Wegscheider who pointed out several years ago, and Holt has incorporated the statement in his work, that the little yellowish masses passed in the stools of dyspeptic infants were not casein, as commonly thought, but fat. In the constipation with which I am now dealing there is an impairment of the agencies concerned either in the digestion or assimilation of fat, or both. The fat appears as the chief constituent of the stool because of its rejection or failure to be appropriated. It produces constipation by its mechanical effects and the muscular impairment dependent on the contingencies of general malnutrition due to fat deprivation.

A large part of the so-called infant foods, or food attenuants, have been brought before the profession because of the supposed capacities to antagonize and modify what has been considered as casein. We should ever keep in mind the great fact that the real test of any food is not is digestibility, however important this may be, but the ability of the patient to assimilate and use it.

CUTLER, ELBRIDGE, BOSTON: GASTRIC DYSPEPSIA. (*Boston Medical and Surgical Journal*, Vol. CXXXVII, No. 11.)

Among the causes of gastric dyspepsia the author mentioned the following: Faulty preparation of food in mouth by imperfect mastication and insalivation; too frequent ingestion of food; the choice of food, the composition of it, and the size of a meal; ingestion of too much or too cold fluids during meals; too free use of carbonated table waters; habitual drinking of alcoholic liquors before, with, or after meals; the misuse of spices; too much exercise or head work after eating.

Emphasis was laid upon the importance of a thorough general as well as local examination of these cases. The important symptoms mentioned are, in acute dyspepsia, primarily an indigestion following a meal which does not set well, manifesting itself as an unpleasant feeling or sense of discomfort, pressure, or fulness in epigastric region; increasing discomfort, distension of stomach, nausea and increased flow of saliva. Vomiting may entirely relieve the patient if the stomach can entirely be relieved of its contents.

In chronic dyspepsia the gastric symptoms are less prominent; associated are intestinal disorders; loss of weight and strength; disturbed appetite; chronic pharyngeal catarrh; fulness, weight in region of stomach; palpitation, belching, and eructations; pyrosis; diarrhea or constipation may be present.

The heartburn, the author states, may be produced by an increased secretion of hydrochloric acid, hyperacidity of the hydrochloric acid of the gastric juice, or increased formation of organic acids in the stomach. The latter are due to an abnormal fermentation during gastric digestion. The burning caused by hydrochloric acid is more severe when due to hydrochloric acid in excess than when due to organic acid, but that due to organic acid is more frequent, appearing some time after a meal.

For the overabundant secretion of gastric juice a tumbler of cold water should be given on an empty stomach early in the morning; careful restriction of the diet to milk, eggs, white meat, easily digested cereals, vegetables, and fruit should be insisted on. It is advised not to administer sodium bicarbonate, as it is changed in the stomach to chloride of sodium, an excitant to secretion of gastric juice. In severe cases stomach-washing before breakfast is important.

The treatment of increase in production of organic acids is that of chronic gastric catarrh and gastric atony.

Pains in the stomach and cramps come only from hinderance of the movements of the gastric contents, except when dependent on great structural defects, and opiates should seldom be used.

Pfaff, Franz, Boston: Treatment of Constipation. (*Boston Medical and Surgical Journal*, September 9, 1897.)

That treatment which will remove the cause of constipation is the best. The causes are varied: retro-flexed uterus, intestinal stricture, anemia, pulmonary congestion, may be mentioned among the number.

Agents which may be beneficial are mentioned as follows: hygienic measures; regular habits, outdoor exercise, gymnastics, hydrotherapy, massage, and electricity.

Diet and medicinal agents will relieve many others. The first should always be tried first and persisted in. Increase in the daily meals fresh vegetables, fresh fruits, and various grains;

coarse breads, graham or rye, and more water. The direction of the diet treatment is by no means easy—each case being one to itself. Food the carbohydrates of which will be transformed into CO_2 and fatty acids cause the contents of the small intestine to remain more fluid; and the presence of the different salts and gums, mucilages, pectins and other colloids contained in vegetable material are most curative. Blueberries, chocolate, tea, and coca should be avoided, owing to the constipating effect of the tannic acid.

Medicinal agents have often to be employed to promote peristalsis, and these agents may be divided into the organic compounds and the inorganic salts.

The chloride of sodium and sulphate of sodium groups constitute the inorganic salts; to the former group belong all neutral salts which are easily absorbed in the small intestine from their watery solutions, they promoting absorption of foodstuffs and increasing peristalsis of the small intestine. They are entirely absorbed in the small intestine and excreted in the urine.

To the other group, sulphate of sodium salts, belong those which are difficult of absorption, such as sulphate and other salts of magnesium, the phosphates and tartrates. These are expelled with the feces and not with the urine—they prevent the absorption of water.

Increase of peristalsis is caused by the use of the organic salts, as rhubarb, senna, cascara sagrada, aloes, gutta, elaterium, colocynth, jalap, and croton oil.

Dr. Pfaff states that if dried ox bile be given in suitable form and sufficient quantity, fifteen to thirty grains three times a day, constipation may be relieved in very obstinate cases. He advises giving it in salol coated pills to prevent absorption from the stomach in large quantities, before meals, after which the bowels may become entirely normal. Bile acts mainly on the contents of the small intestines, and the indications for its use are limited.

It must not be overlooked that treatment directed to the large intestine is often at fault when the condition would be relieved by a modification of the contents of the small intestine. Atropine, phystogmine are mentioned as indicated under certain conditions.

Book Reviews.

The Psychology of Suggestion: A Research into the Subconscious Nature of Man and Society. By Boris Sidis, M. A., Ph. D., Associate in Psychology at the Pathological Institute of the New York State Hospitals. With an Introduction by Prof. William James, of Harvard University. New York: D. Appleton & Co. 1898.

This work by Dr. Sidis shows great application and thorough work on the part of the author, and is a valuable contribution to the subject. No better description of the work, or criticism, can be made than that furnished by Prof. William James in his Introductory, and we quote from that as follows:

"The meaning of personality, with its limits and its laws, offers a problem which, until quite recently, had to be discussed almost exclusively by logical and metaphysical methods. Within the past dozen years, however, an immense amount of new empirical material had been injected into the question by the observations which the 'recognition' by science of the hypnotic state set in motion. Many of these observations are pathological, fixed ideas, hysteric attacks, insane delusions, etc.; and altogether, although they are far from having solved the problem of personality, they must be admitted to have transformed its outward shape. What are the limits of consciousness of the human being? Is 'self-consciousness' only a part of the whole consciousness? Are there many selves dissociated from one another? What is the medium of synthesis in the group of associated ideas? How can a certain system of ideas be cut off and forgotten? Is personality a product and not a principle?

"Such are the questions now being forced to the front, questions now asked for the first time with some sense of their concrete import, and questions which it will require a great amount of further work, both of observation and analysis, to answer adequately. Meanwhile many writers are seeking to fill the gap, and several books have been published seeking to popularize the new observations and ideas and present them in connected form. Dr. Sidis' work distinguished itself from some of these by its originality, and from others by the width of its scope.

"It is divided into three parts—'Suggestibility,' 'The Self,' 'Man as one of a Crowd.' Under all of these heads the author

is original. He tries by ingenious experiments to show that the suggestibility of waking persons follows an opposite law to that of hypnotic subjects. . . . In No. 2, on 'The Self,' a very full account is given of 'double personality,' 'subliminal consciousness,' etc. The author is led to adopt as a plan of the dissociations which lie at the root of all these conditions the psychological theory of retraction of the transmission of the brain cells, which in other quarters also seems coming to the front. He makes an elaborate classification of the different degrees of dissociation or amnesia, and, on the basis of a highly interesting and pathological case, suggests definite methods of diagnosis and cure. This portion of the book well deserves the attention of the neurologist.

"In No. 3 the very important matter of 'crowding psychology' is discussed, almost for the first time in English; there is probably no more important topic to the student of public affairs. Dr. Sidis illustrates it by fresh examples, and his treatment is highly suggestive."

This opinion by so eminent an authority as Prof. James expresses admirably the scope of the work, and his opinion is thoroughly concurred in by the reviewer. The book is thoroughly up-to-date in every respect, and especially is this the case in his application of the neuron theory to the various psychological states.

Hugh Wynne, Free Quaker. Some time Brevet Lieutenant-Colonel on the Staff of His Excellency General Washington. By S. Weir Mitchell, M. D., LL. D. (Harvard and Edinburgh), Philadelphia, Pa. New York: Century Company. 1897.

A notable contribution to American historical fiction has been made in "Hugh Wynne, Free Quaker," and it should gratify the members of the medical profession that its author is of their fraternity. The demure Quaker garb of the volumes gives but little indication of the charm of their contents. Primarily it is a novel of character, a fact to which some of its critics have been singularly oblivious in citing occasional historical inaccuracies. These minor lapses detract nothing from the book, which is peculiarly happy in the reality of its representation of the atmosphere of the period. The characters of Washington and André are drawn with masterly insight. The great leader is not divested of the noble attributes which history and tradition ascribe to him, but particular stress is laid upon those trials and

ordeals which betrayed the true nature of the *man*—his conflicting emotions of pity and sympathy against his stern consciousness of justice and duty. André's tragic death throws a new light upon his part in our American Revolution, and we are more ready to revere him as a noble and courageous soldier than, in excess of patriotism, to stigmatize him with the name of "spy."

The character of Hugh Wynne develops naturally under the narrow limitations of thought and action imposed by the Quaker doctrine; and it is interesting to note the influence exerted upon the boy by the austerity and bigotry of his unsympathetic father, and by the tender devotion and quaint graces of his little French mother, who was "but half a Quaker" despite her somber dress, and who completely wins the reader. The rivalry for the hand of the capricious but lovable Darthea unfolds a love story of genuine interest, which affords a clear insight into the unusual but thoroughly attractive character of Aunt Gainor, behind whose prejudice and masculinity of thought and deed is disclosed a wealth of genuine kindliness and womanly feeling.

To the physician this work of Dr. Mitchell's will possess peculiar interest in the realistic portrayal of the decline of John Wynne's mental powers, "whose arteries were older than the rest of him;" while the student of history will be engrossed with the powerful descriptions of the war. But above all are the excellence of the character sketching and the broad and deep understanding of human nature which pervades the entire volume.

A Text-Book of the Diseases of Women. By Henry J. Garrigues, A. M., M. D., Professor of Obstetrics and Gynecology in the New York School of Clinical Medicine, etc. Containing three hundred and thirty-five engravings and colored plates. Second edition, thoroughly revised. Price, $4, cloth; $5, one half morocco. Philadelphia: W. B. Saunders. 1897.

This, the second edition of Dr. Garrigues' book, is a decided improvement upon the first edition, issued in 1894. This is due not only to the fact that he has brought it up to the standard reached in gynecological work since 1894, but in many details the present edition is far superior. Illustrations which in the first were crude and decidedly antiquated have been replaced in this by modern ones. Still, however, there are some in this which could have been as well left out.

There is a great deal to commend in this work, but in many places subjects which merit, in fact which demand, more atten-

tion are dismissed in a few words or perhaps a page or so. For instance, under the caption "Disinfection, Asepsis, and Antisepsis," only a trifle over one page is used, and to the preparation of the hands of the operator and his assistants only twelve lines are devoted, a most — one might almost say *the* most — important step in the operation. We do not agree with the author in the importance placed in using antiseptics for this purpose. Those who use antiseptics most freely are those who are deficient in their aseptic technique, and generally know it.

The subject of anesthetics is disposed of in about four pages, and it has rarely been our pleasure to see the subject more succinctly put in so short a space. The author speaks well of the A. C. E. mixture, but prefers ether for general use.

It is a pleasure to note in referring to the "inflated rubber cushion," on page 194, the author does so by this name, and does not call it this or that man's pad.

We think that the chapter on intestinal surgery had best have been left out, rather than have dismissed it with so incomplete a description as is given in the appendix.

The book is attractively gotten up, and the publishers certainly deserve great credit for this.

The Elements of Clinical Diagnosis. By Professor Dr. G. Klemperer, Professor of Medicine at the University of Berlin. First American from the seventh German edition, with sixty-one illustrations. Authorized translation by Nathan E. Brill, A. M., M. D., Adjunct Physician Mount Sinai Hospital, New York, and Samuel M. Brickner, A. M., M. D., Assistant Gynecologist Mount Sinai Hospital, New York. The Macmillan Company. 1898.

Professor Klemperer's work has reached the seventh edition in German, but this is the first opportunity we have had of seeing its translation. The translators have done their work admirably, and the English-speaking profession of America is to be congratulated on the publication of this work. We have never seen a little book which is so complete in every respect as the one before us. Necessarily some subjects have to be treated in an incomplete manner, but even that does not detract from the value of the book in the least.

It is to be regretted that the publishers have insisted upon the use of the diphthongs so generally, as æ, œ, etc., which most medical publications and writers have long since dropped.

The introduction into the text of sample temperature charts is decidedly to be commended, as, in our opinion, it is difficult to obtain so accurate an idea of the progress of a case as by the temperature chart. In the typhoid fever section no mention is made of the serum diagnosis, though the diazo reaction is referred to quite fully.

Ankle clonus is referred to as "foot" clonus. The chapter on "Diagnosis of Diseases of the Stomach" is unusually complete and placed in an attractive manner with a splendid resumé of the various chemical analyses of the contents of the stomach. The rest of the chapter upon the diseases of the digestive system is fully as complete.

It is rather to be regretted that diseases of the respiratory organs is dismissed with so short a description, but as a resumé it will serve its purpose splendidly. The same may be said of the description of the valvular lesions of the heart. The chapter on the Roentgen Rays can not be considered at all complete; in fact, we think so brief a description is worse than none at all.

As the publishers state, the German school leads in clinical diagnosis, and it must indeed be a pleasure to sit in the classes of so distinguished a teacher as Professor Klemperer, as it is a pleasure to read his most excellent work.

Applied Physiology for Advanced Grades. Including the Effects of Alcohol and Narcotics. By FRANK OVERTON, A. M., M. D., Late House Surgeon to the City Hospital, New York. Cloth. 12mo, four hundred and thirty-two pages. With Illustrations and Diagrams. Price, 80 cents. American Book Company, New York, Cincinnati, and Chicago.

This book has been prepared to meet the requirement of teachers and schools for a modern text-book of Applied Physiology, which should embody the latest results of study and research in biological and chemical science, and the best pedagogical methods in science teaching. It represents a new and radical departure from the old-time methods pursued in teaching physiology. It begins with the study of the cells of the body as the units in which life exists and acts, and with this as the basis of treatment, shows their relation to all the elements of the human body and all the processes of human action. This is the keynote of the treatment throughout the book, and is the first attempt to apply, in a consistent and scientific manner, the prin-

ciples and facts of biology to the study and teaching of physiology in schools.

Other distinctive and valuable features of the book are the arrangement of summaries and review topics at the end of each chapter; the list of subjects for original demonstrations and the use of the microscope in connection with the study; the special treatment of hygienic subjects, as air, ventilation, drinking-water, sewage, clothing, bathing, bacteria, repair of injuries, etc. The effects of alcohol and narcotics are treated in a judicious and scientific manner, not in a separate chapter, but in connection with the several topics and subjects treated in the book. The book is not only modern and scientific in treatment, but it is written in such a clear and direct style as to make every subject interesting and comprehensible. The topical arrangement and clear typography of the pages will render the use of the book convenient and satisfactory.

The American Microscopical Society. Transactions of the Twentieth Annual Meeting held at Toledo, August 5, 6, and 7, 1897. Edited by the Secretary, Wm. C. Krauss, M. D., F. R. M. S., Buffalo, N. Y.

Transactions of the Medical Society of the State of North Carolina. Forty-fourth Annual Meeting, held at Morehead, N. C., June 8, 9, and 10, 1897. Secretary, Richard H. Lewis, M. D., Raleigh, N. C.

Transactions of the Texas State Medical Association. Twenty-ninth Annual Session, held at Paris, Texas, April 27, 28, 29, and 30, 1897. Dr. H. A. West, Galveston, Tex., Secretary.

Transactions of the British Orthopedic Society. Volume II; Session 1896. E. Luke Freer, M. R. C. S., Eng., Secretary, Birmingham, Eng.

These volumes are valuable because of the complete record of papers read at the different meetings and their discussions. The volumes are all bound in paper, and present evidences of careful preparation on the part of the various publication committees.

A feature which will be appreciated by most societies is the introduction into the volume, by the Microscopical Society, of a number of pages of advertising matter, from which the handsome sum of one hundred and forty-four dollars was realized. This helped very materially in the payment for the publication of the transactions. The difficulty which most societies have in issuing these annual volumes is the collection of sufficient money to pay for the publication, as is evidenced by the Secretary's report of the Texas State Medical Association, in which he reviews the various methods which may be adopted to accomplish this end,

said society being in need of funds for this purpose. The British Society has adopted this same method, and has four pages of advertising matter.

The American Year-Book of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, etc. Collected and arranged with critical editorial comments by a corps of editors under the general editorial charge of GEORGE M. GOULD, M. D. Illustrated: Cloth, $6.50; half morocco, $7.50. For sale by subscription. Philadelphia: W. B. Saunders. 1898.

The editor announces in his preface that a number of changes have occurred in the editorial staff, among which is the resignation of Professor Leffman. Three departments have been created of the special field edited by him, Physiologic Chemistry, edited by Prof. John J. Abel, of Johns Hopkins Hospital; Public Hygiene and Preventive Medicine, by Dr. Samuel W. Abbott, Secretary of the Massachusetts State Board of Health; and Legal Medicine, by Dr. Wyatt Johnson, of Montreal, Canada. The general summary of the year's work is written by Drs. William Pepper and Alfred Stengel. In this due credit is given Widal for introducing a most useful and practical diagnostic test of typhoid fever. A most delightful resumé of the work done in gastro-intestinal surgery is given in some forty pages, of which appendicitis claims its full share. The articles on hernia, by Lothrop, Morton, Paget, Malloy, Ransohoff, De Garmo, Stinson, Kocher, Coley, are reviewed fully, and bring the question thoroughly up to date. It is greatly to be regretted that the editor in charge of the literature on Diseases and Surgery of the Rectum should have credited Dr. Jos. Bacon's article on Stricture of the Rectum to the *Quarterly Medical Journal* instead of to this journal. This is a mistake which of course can not be rectified.

Sexual Neurasthenia. Its Hygiene, Causes, Symptoms, and Treatment, with a chapter on Diet for the Nervous. By GEORGE M. BEARD, A. M., M. D., New York, with notes and additions by A. D. ROCKWELL, A. M., M. D., New York. Fifth edition, with formulas. New York: E. B. Treat & Co. 1898.

This is a very interesting and instructive book. It deals with a class of troubles than which none are so poorly understood and so many mistakes made in their treatment.

Neurasthenia, a term which has become by universal use to express many and varied conditions, the author narrows down

to mean "nervous exhaustion," and refers to "sexual neurasthenia," "cerebral," "spinal," "digestive," "traumatic," "hemi-neurasthenia," and "hysterical neurasthenia." Neurasthenia he defines as "a chronic, functional disease of the nervous system, the basis of which is impoverishment of nervous force; deficiency of reserve, with liability to quick exhaustion, and a necessity for frequent supplies of force; hence the lack of inhibitory or controlling powers, physical and mental, the feebleness and instability of nerve action, and the excessive sensitiveness and irritability, local and general, and the vast variety of symptoms, direct and reflex."

Medical men as a rule lay too little stress upon the symptoms presented by the sexual neurasthenics, and think of them too much in general terms. Their advice is, therefore, incomplete and the patient not benefited. This book, with its chapter of illustrative cases with their prominent symptomatology, will prove instructive in many ways.

Diseases of the Stomach. Their Special Pathology, Diagnosis, and Treatment, with sections on Anatomy, Physiology, Analysis of the Stomach Contents, etc. In three parts. By JOHN C. HEMMETER, M. B., M. D., Philos. D., Clinical Professor of Medicine in the Baltimore Medical College; Consultant to the Maryland General Hospital, etc. With many original illustrations. Philadelphia: P. Blakiston, Son & Co. 1897. Price, $6.00.

It is a great pleasure to be able to say that the latest aspirant for honors in this special field, the book before us, an American book, is the best that we have seen. This is a well-deserved compliment, for there are a number of most excellent works on the stomach and its diseases. That this should have been produced in this country by one of our own is a cause for pride; a demonstration that we, as a profession, are equal in clinical work and clinical results to any other nation.

The book, as announced on the title-page, is divided into three parts: Anatomy and Physiology of the Digestive Organs; Methods and Technics of Diagnosis; Part II, Therapy and Materia-Medica of Stomach Diseases; Part III, The Gastric Clinic.

Part I is admirable and the illustrations excellent, especially the colored plates showing the structure of the stomach.

Space does not permit a detailed review of this work; it is, however, a most excellent book in every respect.

A Clinical Text-Book of Surgical Diagnosis and Treatment: For Practitioners and Students of Surgery and Medicine. By J. W. MacDonald, M. D., Graduate in Medicine of the University of Edinburgh; Licentiate of the Royal College of Surgeons, Edinburgh; Professor of the Practice of Surgery and of Clinical Surgery in Hamline University, Minneapolis, etc. With 328 illustrations. Philadelphia: W. B. Saunders, Publisher. Price, cloth, $5.00; half morocco, $6.00 net.

A great surgeon once said: "If a physician is correct in his diagnosis, he is very apt to be treating the case properly." This book will be of wonderful service to the surgeon in the way of making a proper diagnosis of all surgical affections—and of giving the proper treatment. Many of the text-books are singularly deficient in the first, devoting most of the space to the latter. Every department is covered by the author, and well covered, and his book is up to date in every particular—even specialists in the different departments of surgery will be benefited by a perusal of this book, as such subjects are fully and fairly considered. To the student the work is invaluable. The publishers deserve credit for the admirable manner in which the book is issued.

Orthopedic Surgery. By James E. Moore, Professor of Orthopedia and Clinical Surgery in College of Medicine of the University of Minnesota, etc. With one hundred and seventy-seven illustrations. Philadelphia: W. B. Saunders. 1898.

This book of three hundred and fifty pages, concise, finely printed, and well illustrated, on a subject little understood by physicians generally, appears at a very opportune time. As a text-book, and one for ready reference by the practitioner, it could hardly be improved upon. The author gives evidence of a large experience in this special department, as well as general surgery. He does not confine the orthopedist to "straps and buckles," but expects him to do whatever operation is required to best fulfill the indications. The book is strictly "up to date," and only words of praise can be accorded it by the reviewer.

AP MORGAN VANCE.

The Care and Feeding of Children. A Catechism for the Use of Mothers and Children's Nurses. By L. Emmett Holt, M. D., Professor of Diseases of Children in the New York Polyclinic, etc. Second edition, revised and enlarged. New York: D. Appleton & Co. 1898.

In 1894 it was our pleasure to call the attention of our readers to this little book by Dr. Holt. It is gratifying that the

first edition has been so well received as to demand a second edition in so short a time. The same features of the first edition have been preserved in this, in that it is a series of questions and answers arranged in such a manner as to be of the greatest service to mothers and nurses.

To those who are familiar with Dr. Holt's writings it is unnecessary to comment upon the excellent style which he has displayed in this little book, but those who are not familiar with his writings we can but refer to a review of his most excellent work entitled "Diseases of Infancy and Childhood," in a recent issue of the QUARTERLY.

To the former edition Dr. Holt has added several features which make this one more valuable, such as a description of the various methods of the modification of cows' milk, with formulas, making it very easy for home modification, with but little trouble on the part of the physician in further instructing them. It is indeed a valuable book, and we predict for it a rapid sale.

Manual of Pathology. Including Bacteriology, the Technic of Post-Mortems, and Methods of Pathologic Research. By W. M. TATE COPLIN, M. D., Professor of Bacteriology and Pathology, Jefferson Medical College, etc. With two hundred and sixty-eight illustrations. Philadelphia: P. Blakiston, Son & Co. 1897. Price, $3.00.

This excellent book has overstepped the limits of a *Manual*, having assumed in the second addition six hundred and thirty-eight pages and two hundred and sixty-eight illustrations. It includes chapters on technic, general and special pathology. The illustrations are numerous, and almost without exception most excellent. The plan pursued of placing at the conclusion of each chapter a list of questions is an excellent one, and will be of great assistance to the student in reviewing the subject.

Second Annual Report of Board of Managers of Second Hospital for the Insane of the State of Maryland. DR. GEORGE H. ROHE, Superintendent. 1897.

This report of the superintendent of this hospital is interesting, especially on account of the description given in it of the new buildings which have been in course of construction under the supervision of this eminent authority for some time. It is a model of its kind, and will no doubt be copied extensively in the future when similar buildings are in prospect of erection.

Notes.

To the Health Officials, Physicians, and People of Kentucky:

Smallpox is now widespread in Eastern Tennessee, North Carolina, Southwestern Virginia, and Northern Alabama, and several cases exist in Middlesborough and near Jellico, in this State. The epidemic appears to have originated in Mobile last summer, and to have been gradually extending northward since. It is chiefly prevalent among the negro population, and manifests an unusual tendency everywhere to break over official control and assume an epidemic form.

This Board, therefore, feels that it is its duty to warn the people that prompt action may prevent its further spread in this State. Fortunately prevention is as certain and safe as it is cheap and easy. Vaccination and revaccination properly done with reliable virus is a certain preventive, and is entirely free from danger. This is the conclusion of the health officers of the world after years of patient investigations, and is now an accepted truth in preventive medicine.

Notwithstanding these facts, about one third of the people of Kentucky have never availed themselves of this protection. Our people should not wait for orders from boards of health in the presence of an epidemic to force them to an evident duty. Every citizen should see to it that not only himself but everyone for whom he is responsible is vaccinated at once. No child should be admitted to any public or private school who has not been vaccinated, and all factories, railroads, and mines should make the same requirement. This is especially important in view of the threatened danger.

The operation should be done by a competent physician, under proper aseptic precautions, and he should see the person vaccinated from time to time so the result may be certain. Imperfect vaccination gives a false and often fatal sense of security. Reliable virus can be obtained from the National

Vaccine Farm, Washington, D. C., or their agents, the Henry Pharmacal Company, Louisville, Ky.

In addition it is urgently requested that all boards of health perfect their organization at once, if they have not done so, and take every precaution to prevent the entrance of the disease into their jurisdictions, or, failing in this, be ready to stamp it out by strictly isolating the first case, and vaccinating and revaccinating every person exposed to it. All funerals should be strictly private.

This Board holds itself ready to give any assistance in its power at any time.

By order of the Board.

J. M. MATHEWS, M. D., *President.*
J. N. MCCORMACK, M. D., *Secretary.*

COOKING FOR THE SICK.—Mrs. S. T. Rorer lays down these rules for "Cooking for the Sick and Convalescent," in the March *Ladies' Home Journal:* "In cooking for the sick a moderate heat is necessary to bring out and intensify, rather than destroy or keep within, the delicate flavorings of the materials used. Where receipts call for butter it must be added to hot dishes after they have been taken from the fire. All fried things must be avoided.

"Gruels or semi-starchy foods require long, slow cooking. Meats must be cooked, but not overdone. Under no circumstances should raw meats, raw beef juice, or raw beef tea be used. Pasteurization is necessary to remove the danger of disease germs.

"Serve hot foods hot; cold foods cold. This does not mean the extreme of either.

"In arranging the tray keep every thing as dainty as possible, using white or very pale colors. A simple vase of flowers, with not too decided an odor, will prove an added attraction. Roses, violets, lilies-of-the-valley or bouvardias are advisable for their daintiness and absence of heavy odor."

ON Saturday, the 15th of January, a Training School for Nurses was opened at the Loomis Sanitarium, Liberty, N. Y. The class was opened with thirteen members; Miss Helen Kim-

ber, a graduate of the Bellevue Training School, is the superintendent. The opening lecture was given by Dr. H. P. Loomis, Professor of Materia Medica of the University of New York.

While these nurses will receive the regular training, such as is given in other schools, special attention will be paid to instruction in the care of cases of tuberculosis. This departure in the way of training is a new departure, and is believed to be justified by the ever-increasing demand for nurses for this class of patients.

It is believed that these nurses can be constantly and advantageously employed at health resorts and as traveling companions for young people in incipient stages of the disease. The course will be of two years' duration.

One of the features of the visit to the Rockies on account of the American Medical Association meeting will be an excursion from Denver to Salt Lake City and return via the D. & R. G., Colorado Midland, and Rio Grande Western railways, through the "heart of the Rockies," furnishing a splendid opportunity to view the most magnificent scenery on the American continent. Salt Lake City is an ideal summer resort, and the bathing at Saltair, in the Great Salt Lake—inland salt sea, nearly a mile above sea level—is superb in June. There are more attractions in and about Salt Lake City than any place in the world. Send to F. A. Wadleigh, G. P. A. Rio Grande Western Railway, Salt Lake City, for copy of pamphlet on Salt Lake City and the Rocky Mountains.

Dr. William B. Meany, late of St. Louis, has returned to Louisville, his native city, to practice his profession. Dr. Meany has for many years made diseases of the eye, ear, nose, and throat a specialty, and has contributed many interesting and learned articles, on these special subjects, to medical literature. The profession will be glad to welcome Dr. Meany back home.

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